

COMPREHENSIVE SUBJECT, AUTHOR, TITLE INDEX¹
VOLUME 32, 1984

F. A. MUMPTON

A

- ABDER-RUHMAN, M. (with A. L. SENKAYI, J. B. DIXON, L. R. HOSSNER, and D. S. FANNING), Mineralogy and Genetic Relationships of Tonstein, Bentonite, and Lignitic Strata in the Eocene Yegua Formation of East-Central Texas 259
- Adsorption (see also Sorption)
- benzene on Cu-, Fe-exchanged hectorite 327
 - chlorate on kaolinite 4
 - Cu, Co on synthetic allophane, imogolite 300
 - Cu on gibbsite surface, effect of ligand displacement by NH₃ 12
 - Cu on high-surface area gibbsite 12
 - Cu on hydroxy-Al-hectorite, by ESR 407
 - flavomonucleotide on smectite 279
 - molybdate, on kaolinite 45
 - phosphate on allophane, imogolite 291
 - phosphine on Ni-, Co-exchanged hectorite, zeolite Y 74
 - Rh-phosphine on hectorite 185
 - Si(acac)₃⁺ on hectorite, montmorillonite 93
 - sulfate on kaolinite, ligand exchange 414
 - sulfate on kaolinite, mechanism, mono-, bidentate complex formation 414
 - 2,6-dimethylphenol on smectite, polymerization 108
- Adsorption of Molybdate Anion (MoO₄²⁻) by Sodium-Saturated Kaolinite**, by P. J. Phelan and S. V. Matigod 45
- AEC (see Anion-exchange capacity)
- AKATSUKA, YUICHIRO (with TAKAYOSHI TANJI and KEIJI YADA), Alternation of Clino- and Orthochrysotile in a Single Fiber as Revealed by High-resolution Electron Microscopy 429
- Alcohol
- long XRD spacings from 235
- ALLDREDGE, J. R. (with P. E. ROSENBERG and J. A. KITTRICK), Composition of the Controlling Phase in Muscovite Equilibrium Solubility 480
- Allophane
- adsorption of Cu, Co 300
 - cation, anion retention on 291
 - ESR 291, 300
 - IR, phosphate adsorption 291
 - morphology in bauxite 139
- resilication product in bauxite, Alabama Street Mine, Arkansas 139
 - SiO₂/Al₂O₃ ratio, effect on surface charge 291
- Alternation of Clino- and Orthochrysotile in a Single Fiber as Revealed by High-resolution Electron Microscopy**, by Takayoshi Tanji, Keiji Yada, and Yuichiro Akatsuka 429
- Aluminum
- Al-polycations, intercalated with montmorillonite, kaolinite, soil clay, effect on surface area, flocculation, water uptake, electrophoresis, CEC 49
 - containing hematite, color due to degree of Al substitution 157
 - containing hematite, XRD, synthesis 157
 - dissolution from nontronite by citrate-bicarbonate, citrate-bicarbonate-dithionite treatments 350
 - effect on unit-cell dimensions of goethite 36
 - gibbsite, Cu adsorption on 12
 - gibbsite, Cu-treated, IR, ESR, TEM 12
 - gibbsite, promotion of Cu hydrolysis, polymerization 12
 - goethite, synthesis methods 36
 - hematite, synthesis, TEM, unit-cell parameters 475
 - hydroxy-Al cross-linked with hectorite, surface area, thermal stability, basal spacings 99
 - hydroxy-Al cross-linked with hectorite, synthesis 99
 - hydroxy-Al hectorite, basal spacings, Cu adsorption 407
 - hydroxy-Al hectorite, Cu adsorption followed by ESR 407
 - in goethite, XRD estimation technique 39
 - oxides, effect of dissolution on CEC of soil clays 283
 - solubilization, in preparation of dithionite-reduced smectite 191
 - vs. Si, for dioctahedral smectites 19
- Aluminum hydroxide
- effect on dissolution of CEC of soil clays 203
 - gibbsite in bauxite, XRD, Al/Si ratios 139
 - gibbsite in pallid zone clays, TEM, SAD 363
 - gibbsite, Cu adsorption on 12
 - gibbsite, Cu-treated, IR, ESR, TEM 12
 - gibbsite, promotion of Cu hydrolysis, polymerization 12
- Amine
- induced luminescence in kaolin 58

¹ All items are indexed to the first page of the journal article in which they appear.

Ammonia

ammonium halides, used in synthesis of hydrated kaolinite 29

displacement of ligand OH^- , H_2O by, effect on Cu adsorption on gibbsite 12

ANAND, R. R. (with R. J. GILKES), Weathering of Ilmenite in a Lateritic Pallid Zone 363

Anatase

formation by alteration of ilmenite in lateritic pallid zone 363

XRD, SEM, TEM, EDX 363

ANDREOLI, C. Y. (with A. K. HELMY and N. PEINEMANN), Use of the (02,11) X-ray Diffraction Reflections to Identify Clays 231

Aniline

-vermiculite intercalate, three-dimensional ordering, crystal structure 223

Anion

carbonate, effect of, on yield strength of marine clay 384

chlorate adsorption on kaolinite 45

-exchange capacity, effect of selective dissolution on 282

exchange on allophane, imogolite, soil clay 291

molybdate adsorption on kaolinite 45

sulfate adsorption on kaolinite, mechanism 414

Announcement

21st annual meeting, The Clay Minerals Society 238

Mineralogical Society of America, Short Course on Micas 160

symposium, Clay Minerals in Agriculture, Industry, and the Environment 238

ZEOLITE '85: An International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites 520

Apparatus

deoxygenation of smectites 191

measurement of swelling pressure of clay 357

preparation of cross-linked smectites 99

preparation of dithionite-reduced smectites 191

preparation of oriented films of reduced smectites 191

suction device for mounting preferentially oriented clays 125

Apparent Long Spacings from Clay-Water Gels, Glasses, and Crystalline Materials Due to Total Reflection of X-rays, by G. W. Brindley and T. C. Simonton 235

Asbestos

chrysotile, clino-, ortho- types in a single fiber, by HRTEM 429

Atomic coordinates

hydrogen positions in dickite 483

Attaberg limit

saponite, Ballarat, California 147

B

BACKHAUS, K.-O. (with S. ĐUROVIČ), Polytypism of Micas. I. MDO Polytypes and Their Derivation 453

BACKHAUS, K.-O. (with S. ĐUROVIČ and Z. WEISS), Polytypism of Micas. II. Classification and Abundance of MDO Polytypes 464

BAILEY, S. W., Review of Cation Ordering in Micas 81

BAILEY, S. W. (with G. W. BRINDLEY, D. S. FANNING, H. KODAMA, and R. T. MARTIN), Report of The Clay Minerals Society Nomenclature Committee for 1982 and 1983 239

BAKER, J. C. (with W. G. HARRIS and L. W. ZELAZNY), Depth and Particle Size Distribution of Talc in a Virginia Piedmont Ultisol 227

BARRON, V. (with J. L. RENDON, J. TORRENT, and C. J. SERNA), Relation of Infrared, Crystallochemical, and Morphological Properties of Al-Substituted Hematites 475

BARRON, V. (with J. TORRENT), Influence of Aluminum Substitution on the Color of Synthetic Hematite 157

Basal spacings

aqueous montmorillonite emulsions 320

chlorite, vs. % Si 19

hectorite, hydroxy-Al 99, 407

long spacings from alcohols 235

montmorillonite, effect of intercalated Fe-, Al-polycation content 49

vs. Ca, K content in vermiculite 311

Basalt

hisingerite in joints in 272

Bauxite

allophane in, SEM 139

gibbsite, kaolinite in, XRD, SEM, Al/Si ratio 139

resilication, as followed by morphological changes 139

BEAUFORT, D., An Interstratified Illite/Smectite Mineral from the Hydrothermal Deposit in Sibert, Rhone, France 154

Bentonite (see also Montmorillonite, Smectite)

associated with lignite, tonstein, abundance of Ti, Zr, Ba, Sr, Al 259

associated with lignite, tonstein, IR, petrography, XRD 259

associated with lignite, tonstein, origin 259

Benzene

reaction with Cu-, Fe-exchanged hectorite, free radical formation 327

Bidentate

formation in sulfate adsorption on kaolinite 414

BISH, D. L., Effects of Exchangeable Cation Composition on the Thermal Expansion/Contraction of Clinoptilolite 444

Book review

High-Voltage Electron Diffraction in the Investigation of Layered Minerals, by B. B. Zvyagin, Z. V. Vrublevskaya, A. P. Zhoukhlstov, O. V. Sidorenko, S. V. Soboleva, and A. F. Fedotov 159

Sediment Diagenesis, edited by A. Parker and B. W. Sellwood 486

BRIGATTI, M. F. (with LUCIANO POPPI), Crystal Chemistry of Corrensite: A Review 391

BRINDLEY, G. W. (with S. W. BAILEY, D. S. FANNING, H. KODAMA, and R. T. MARTIN), Report of The Clay Minerals Society Nomenclature Committee for 1982 and 1983 239

BRINDLEY, G. W. (with T. C. SIMONTON), Apparent Long Spacings from Clay-Water Gels, Glasses, and Crystalline Materials Due to Total Reflection of X-rays 235

BRINDLEY, GEORGE W.
obituary 80

C

Calcite

ferrihydrate, goethite, lepidocrocite formed on, by reaction with $\text{Fe}(\text{ClO}_4)_2$, $\text{Fe}(\text{ClO}_4)_3$ solutions 213

reactions of, with $\text{Fe}(\text{ClO}_4)_2$, $\text{Fe}(\text{ClO}_4)_3$ solutions 213

CALVERT, C. S., Simplified, Complete CsCl-Hydrazine-Dimethylsulfoxide Intercalation of Kaolinite 125

Carbonate

effect of, on yield strength of marine clay 384

Catalysis

polymerization of phenols on smectites 108

preparation of hectorite-Rh-phosphine complexes 185

preparation of pillared interlayer complex with tris(acetylacetonato)silicon(IV) and montmorillonite 93

preparation, properties of cross-linked hydroxyl-Al hectorite, fluorhectorite 99

Cation and Anion Retention by Natural and Synthetic Allophane and Imogolite, by C. J. Clark and M. B. McBride 291

Cation Distribution, Mössbauer Spectra, and Magnetic Properties of Ferripyrophyllites, by J. M. D. Coey, F. V. Chukhrov, and B. B. Zvyagin 198

Cation exchange

Ca-, Na-, K-vermiculite, free energy of exchange, entropy, enthalpy of 311

exchangeable cation content, effect on thermal expansion, contraction of clinoptilolite 444

isotherms, Ca-, K-, Na-vermiculite 311

Rh-phosphine complexes on hectorite 185

soil clays, effect of selective dissolution on 283

Cation ordering

ferripyrophyllite, octahedral sheet 198

micas, octahedral, tetrahedral, interlayer cation ordering, review 81

micas, short range, long range, review 81

Cation retention

on imogolite, allophane, soil clay 291

Cation-exchange capacity (CEC)

hectorite, Co-, Ni- 74

hisingerite, from joints in basalt 272

kaolin, Cornwall, Fisher 58

kaolinite, effect of intercalation of Fe-, Al-poly-cation on 49

kaolinite, Gujarat, India 414

montmorillonite, Czechoslovakia 350, 357

montmorillonite, effect of intercalation of Fe-, Al-poly-cation on 49

montmorillonite, New Zealand 350, 357

montmorillonite, Upton, Wyoming 350, 357

nontronite, deep-sea core 375

nontronite, Garfield, Washington 350, 357

saponite, Ballarat, California 147

smectites, relation to octahedral Fe content 357

soil clay, effect of intercalation of Fe-, Al-poly-cation on 49

talc-containing Ultisol, for Ca, Mg, K 227

vermiculite, Palabora, Na-, K-, Ca-forms 311

zeolite Y, Co-, Ni-exchanged 74

CAVALLERO, NANCY (with M. B. MCBRIDE), Effect of Selective Dissolution on Charge and Surface Properties of an Acid Soil Clay 283

CEC (see Cation-exchange capacity)

Cesium

CsCl-hydrazine-DMSO intercalation of kaolinite, procedure 125

CHAN, D. Y. C. (with R. M. PASHLEY and J. P. QUIRK), Surface Potentials Derived from Co-ion Exclusion Measurements on Homoionic Montmorillonite and Illite 131

Characteristics of Ferrihydrates Formed by Oxidation of FeCl_2 Solutions Containing Different Amounts of Silica, by Zahurul Karim 181

Chemical activity diagram

montmorillonite/illite stability 161

Chemical analysis

anatase, in lateritic pallid zone 363

bentonite, Texas, associated with lignite, tonstein 259

chemical mass balance, use with XRD for quantitative mineralogical analysis 19

clay, pallid zone 363

corrensite, statistical analysis 391

gobbsite, synthetic, Na, K content by electron microprobe 433

goethite, Al-, synthetic, Al content 36

hectorite, rare earth exchanged 99

hectorite, rare earth exchanged, hydroxy-Al cross-linked 99

hisingerite, from joints in basalt 272

- iddingsite rims, on olivine 1
illite/smectite, Sibert, France, by electron microprobe 154
ilmenite, in lateritic pallid zone 363
kaolin, Fisher, Cornwall, by XRF 58
leucoxene, in lateritic pallid zone 363
merlinoite, synthetic, Na, K content by electron microprobe 433
muscovite, North Carolina 480
nontronite, deep-sea core, by XRF 375
olivine, Limberg, Germany 1
phillipsite, synthetic, Na, K content by electron microprobe 433
saponite, American Canyon, California 147
saponite, Ballarat, California 147
solute composition, in equilibrium dissolution of mica 480
solutions in equilibrium with illite, kaolinite 115
tonstein, Texas, associated with lignite, bentonite 259
- Chemisorption (see Adsorption)**
Chemisorption of Copper on Hydroxy-Aluminum-Hectorite: An Electron Spin Resonance Study, by J. B. Harsh, H. E. Donner, and M. B. McBride 407
Chemisorption of Cu(II) and Co(II) on Allophane and Imogolite, by C. J. Clark and M. B. McBride 300
- Chlorate**
adsorption on kaolinite 45
- Chlorine**
FeCl₂ solution, oxidation to magnetite, lepidocrocite, akaganeite 167, 175
- Chlorite**
authigenic, constraints on chemical composition 205
basal spacings vs. Si % 19
free energy of formation 205
/montmorillonite interstratification, b-dimension, chemical composition, statistical analysis 391
/saponite interstratification, b-dimension, chemical composition, statistical analysis 391
quantitative mineralogy from XRD and chemical mass balance data 19
regression analyses for Al, Si, Mg, Fe 19
regular solution site-mixing model 205
solid solution in 205
/vermiculite interstratification, b-dimension, chemical composition, statistical analysis 391
- Chromatography**
high-pressure liquid, identification of polymerized phenols on smectite by 108
- Chrysotile**
clino-, ortho- types in single fiber of, by HRTEM 429
lattice defects in, by HRTEM 429
- CHUKHROV, F. V.** (with J. M. D. COEY and B. B. ZVYAGIN), Cation Distribution, Mössbauer Spectra, and Magnetic Properties of Ferripyrophyllites 198
- CHURCHMAN, G. J.** (with B. K. G. THENG, J. S. WHITTON, and G. G. C. CLARIDGE), Comparison of Intercalation Methods for Differentiating Halloysite from Kaolinite 249
- CHURCHMAN, G. J.** (with J. S. WHITTON, G. G. C. CLARIDGE, and B. K. G. THENG), Intercalation Method Using Formamide for Differentiating Halloysite from Kaolinite 241
- Citrate-bicarbonate treatment**
nontronite 191, 350
- Citrate-bicarbonate-dithionite treatment**
acid soil clay, effect on charge, surface properties 283
nontronite 191, 350, 357
talc-bearing Ultisol 227
- CLARIDGE, G. G. C.** (with G. J. CHURCHMAN, J. S. WHITTON, and B. K. G. THENG), Intercalation Method Using Formamide for Differentiating Halloysite from Kaolinite 241
- CLARIDGE, G. G. C.** (with B. K. G. THENG, G. J. CHURCHMAN, and J. S. WHITTON), Comparison of Intercalation Methods for Differentiating Halloysite from Kaolinite 249
- CLARK, C. J.** (with M. B. MCBRIDE), Cation and Anion Retention by Natural and Synthetic Allophane and Imogolite 291
- CLARK, C. J.** (with M. B. MCBRIDE), Chemisorption of Cu(II) and Co(II) on Allophane and Imogolite 300
- CLARKE, O. M., JR.** (with W. D. KELLER), Resilication of Bauxite at the Alabama Street Mine, Saline County, Arkansas, Illustrated by Scanning Electron Micrographs 139
- Clay Minerals Society, The**
annual meeting, 21st, announcement 238
report of Nomenclature Committee for 1982, 1983 239
- CLEMENCY, C. V.** (with P. M. COSTANZO and R. F. GIESE, JR.), Synthesis of 10-Å Hydrated Kaolinite 29
- Clinoptilolite**
effect of exchangeable cation content on unit-cell parameters 444
expansion, contraction, possible, in nuclear waste repository 444
formation in lignite, bentonite, tonstein 259
in tonstein, SEM, XRD 259
XRD, thermal treatment 444
- Co-ion exclusion**
measurements for double layer potential of illite, montmorillonite 131
measurements, Gouy-Chapman theory treatment of 131
- Coagulation**
clay colloidal suspensions, measured by photon correlation spectroscopy 400

- critical coagulation constant, illite 400
 critical coagulation constant, kaolinite 400
 critical coagulation constant, montmorillonite 400
 critical coagulation constant, palygorskite 400
 montmorillonite, influence on co-ion exclusion 131
- Cobalt**
 adsorbed on imogolite, allophane, ESR 300
 adsorption on imogolite, allophane 300
 -exchanged hectorite, zeolite Y, adsorption of phosphines on 74
 -exchanged smectite, preferred means of obtaining PILC structures with Si(acac)₃⁺ 93
- COEY, J. M. D. (with F. V. CHUKHROV and B. B. ZVYAGIN), Cation Distribution, Mössbauer Spectra, and Magnetic Properties of Ferripyrophyllites 198
- Colloid**
 clays, coagulation, by photon correlation spectroscopy 400
 stability of clays, by photon correlation spectroscopy 400
- Colloid Stability of Clays Using Photon Correlation Spectroscopy**, by B. E. Novich and T. A. Ring 400
- Color**
 hematite, synthetic, influence of Al substitution 157
- Comparison of Intercalation Methods for Differentiating Halloysite from Kaolinite**, by B. K. G. Theng, G. J. Churchman, J. S. Whitton, and G. G. C. Claridge 249
- Complexes of Trimethylphosphine and Dimethylphenylphosphine with Co(II) and Ni(II) on Hectorite and on Zeolites X and Y**, by R. A. Schoonheydt, Rudi Van Overloop, Mathieu Van Hove, and Johan Verlinden 74
- Composition of the Controlling Phase in Muscovite Equilibrium Solubility**, by P. E. Rosenberg, J. H. Kittrick, and J. R. Alldredge 480
- Copper**
 adsorbed on gibbsite, effect of ligand displacement by NH₃ 12
 adsorbed on gibbsite, TEM, IR, ESR 12
 adsorption on allophane, imogolite 300
 adsorption on allophane, imogolite, ESR 300
 adsorption on gibbsite 12
 chemisorption on hydroxy-Al-hectorite, by ESP 407
 -exchanged hectorite, activation energy, EPR 327
 -exchanged hectorite, reaction with benzene 327
 hydrolysis, polymerization, promoted by gibbsite 12
- Corrensite**
 b-dimensions, chemical analyses 391
 crystal chemistry, statistical analysis 391
- COSTANZO, P. M. (with R. F. GIESE, JR. and C. V. CLEMENCY), Synthesis of 10-Å Hydrated Kaolinite 29
- COSTANZO, P. M. (with R. F. GIESE, JR. and M. LIP-SICAS), Static and Dynamic Structure of Water in Hydrated Kaolinites. I. The Static Structure 419
- COYNE, L. M. (with GLENN POLLACK and ROGER KLOEPPING), Room-Temperature Luminescence from Kaolin Induced by Organic Amines 58
- Cross-linked smectite (see also Pillared interlayer complexes)
 hydroxy-Al-hectorite, fluorhectorite, synthesis, surface area, thermal stability, basal spacings 99
- Cross-linked Smectites. Synthesis and Properties of Hydroxy-Aluminum Hectorites and Fluorhectorites**, by J. Shabtai, Maria Rosell, and M. Tokarz 99
- Crystal Chemistry of Corrensite: A Review**, by M. F. Brigatti and Luciano Poppi 391
- Crystal structure**
 aniline-vermiculite intercalate, three-dimensional ordering 223
 hydrogen positions in dickite 483
 kaolin-group minerals, interpretation of NMR spectra 233
 MDO polytypism of micas, classification, abundance 464
 MDO polytypism of micas, derivation, symbols 453
 mica, cation ordering, review 81
- Cu²⁺ Interaction with Microcrystalline Gibbsite: Evidence for Oriented Chemisorbed Copper Ions**, by M. B. McBride, A. R. Fraser, and W. J. McHardy 12
- Curie temperature
 paramagnetic, ferripyrophyllite 198
- D
- Deep sea**
 core, nontronite from, XRD, TEM, DTA, IR, surface area, chemical composition, Mössbauer spectra, oxygen isotopes 375
 core, nontronite, origin, age 375
- Dehydration**
 clinoptilolite, possible effect of expansion, contraction on nuclear waste repository 444
 clinoptilolite, with different exchangeable cations, effect on unit-cell parameters 444
- Depth and Particle Size Distribution of Talc in a Virginia Piedmont Ultisol**, by W. G. Harris, L. W. Zelazny, and J. C. Baker 227
- Diagenesis**
 chlorites, regular solution site-mixing model for 205
 illite, illite/smectite, diagenetic, XRD identification procedures 237
 occurrence of zeolites in saline, alkaline lake deposits 433

- sediment, book review, *Sediment Diagenesis* 486
- Dialysis
separation of calcite and $\text{Fe}(\text{ClO}_4)$ solutions 213
treatment, in removal of solutes, in preparation of dithionite-reduced smectite 191
- Dickite
hydrogen positions 483
interpretation of NMR spectra 233
- Differential scanning calorimetry (DSC)
kaolinite, hydrated, determination of kinetics, activation energy of dehydration, heat capacity of reaction 419
- Differential thermal analysis (DTA)
ferrihydrite, formed by oxidation of FeCl_2 solutions 181
halloysites, kaolinites, estimates by 249
hisingerite from joints in basalt 272
illite/smectite, Sibert, France 154
nontronite, deep-sea core 375
saponite, Ballarat, California 147
talc-bearing Ultisol 227
- Dimethyl sulfoxide (DMSO)
-CsCl-hydrazine intercalation of kaolinite, procedure 125
intercalated in kaolinite, formation of hydrated kaolinite 419
-kaolinite intercalate, methanol washing to form 10-Å hydrate of kaolinite 29
-kaolinite intercalate, NH_4F treatment to form 10-Å hydrate of kaolinite 29
- Dissolution
calcite, partial, reactions with $\text{Fe}(\text{ClO}_4)_2$, $\text{Fe}(\text{ClO}_4)_3$ solutions 213
citrate-bicarbonate, citrate-bicarbonate-dithionite, of nontronite 350
Fe, Al, Si from nontronite 191
mica, equilibrium solution treatment, composition of controlling phase 480
montmorillonite, effect on oxidation, reduction of structural Fe on 350
nontronite, effect on oxidation, reduction of structural Fe on 350
selective, effect on surface properties of soil clays 282
selective, elements extracted from soil clays by 283
- Dithionite
-reduced smectite, preparation, handling of 191
-reduced smectite, swelling changes 357
- DIXON, J. B. (with A. L. SENKAYI, L. R. HOSSNER, M. ABDER-RUHMAN, and D. S. FANNING), Mineralogy and Genetic Relationships of Tonstein, Bentonite, and Lignitic Strata in the Eocene Yegua Formation of East-Central Texas 259
- DONAHOE, R. J. (with J. G. LIOU and SANDRA GULDMAN), Synthesis and Properties of Zeolites in the System $\text{Na}_2\text{O}-\text{K}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ 433
- DONNER, H. E. (with J. B. HARSH and M. B. MCBRIDE), Chemisorption of Copper on Hydroxy-Aluminum-Hectorite: An Electron Spin Resonance Study 407
- Double layer
potentials of montmorillonite, illite, from co-ion exclusion measurements 131
- DSC (see Differential scanning calorimetry)
- DTA (see Differential thermal analysis)
- DUDENY, A. W. L. (with MARK HODGSON), Estimation of Clay Proportions in Mixtures by X-ray Diffraction and Computerized Chemical Mass Balance 19
- ĐUROVIĆ, S., book review, *High Voltage Electron Diffraction in the Investigation of Layered Minerals* by B. B. Zvyagin, Z. V. Vrublevskaya, A. P. Zhoukhlistov, O. V. Sidorenko, S. V. Soboleva, and A. F. Fedotov 159
- ĐUROVIĆ, S. (with K.-O. BACKHAUS), Polytypism of Micas. I. MDO Polytypes and Their Derivation 453
- ĐUROVIĆ, S. (with Z. WEISS and K.-O. BACKHAUS), Polytypism of Micas. II. Classification and Abundance of MDO Polytypes 464
- E
- EASTMAN, M. P. (with D. E. PATTERSON and K. H. PANNELL), Reactions of Benzene with Cu(II)- and Fe(III)-Exchanged Hectorites 327
- EDX (see Energy dispersive X-ray analysis)
- Effect of Oxidation State of Octahedral Iron on Clay Swelling**, by J. W. Stucki, P. F. Low, C. B. Roth, and D. C. Golden 357
- Effect of pH on the Rheology of Marine Clay from the Site of the South Nation River, Canada, Landslide of 1971**, by J. K. Torrance and Maria Pirnat 384
- Effect of Selective Dissolution on Charge and Surface Properties of an Acid Soil Clay**, by Nancy Cavallero and M. B. McBride 283
- Effects of Exchangeable Cation Composition on the Thermal Expansion/Contraction of Clinoptilolite**, by D. L. Bish 444
- Effects of Reduction and Reoxidation of Structural Iron on the Surface Charge and Dissolution of Dioctahedral Smectites**, by J. W. Stucki, D. C. Golden, and C. B. Roth 350
- EGGLETON, R. A., Formation of Iddingsite Rims on Olivine: A Transmission Electron Microscope Study 1
- EL-AMAMY, M. M. (with THEODOR MILL), Hydrolysis Kinetics of Organic Chemicals on Montmorillonite and Kaolinite Surfaces as Related to Moisture Content 67
- Electron diffraction
book review, *High Voltage Electron Diffraction in the Investigation of Layered Minerals* 159
hisingerite, from joints in basalt 272

- Electron microprobe analysis (see also Energy dispersive X-ray analysis)
 anatase, in lateritic pallid zone 363
 gobbinsite, synthetic, Na, K content 433
 iddingsite rims on olivine 1
 illite/smectite, Sibert, France 154
 ilmenite, in lateritic pallid zone 363
 leucoxene, in lateritic pallid zone 363
 merlinoite, synthetic, Na, K content 433
 mica, before, after equilibrium dissolution treatment 480
 pallid zone clay 363
 phillipsite, synthetic, Na, K content 433
- Electron paramagnetic resonance (EPR)
 Cu-, Fe-exchanged hectorite, benzene adsorbed 327
- Electron spin resonance (ESR)
 allophane 291, 300
 chemisorption of Cu on hydroxy-Al-hectorite, studied by 407
 gibbsite, Cu-treated 12
 hydroxy-Al-hectorite, Cu-adsorbed 407
 imogolite 291, 300
 polymerized phenols on smectite 108
 soil clays 283, 291
- Electrophoresis
 kaolinite, effect of intercalation of Fe-, Al-polycation on 49
 montmorillonite, effect of intercalation of Fe-, Al-polycation on 49
 soil clay, effect of intercalation of Fe-, Al-polycation on 49
 soil clay, effect of selective dissolution on 283
- Emulsion
 montmorillonite, aqueous, layer stacking, XRD 320
- Energy dispersive X-ray analysis (EDX) (see also Electron microprobe analysis)
 Al/Si ratios in bauxite, as means of following re-silication process 139
- Engineering properties
 marine clay, site of South Nation River, Canada, landslide 384
 saponite, Ballarat, California 147
- Enthalpy
 of exchange, Na-, K-, Ca-vermiculite 311
- Entropy
 of exchange, Na-, K-, Ca-vermiculite 311
- EPR (see Electron paramagnetic resonance)
- ESR (see Electron spin resonance)
- Estimation of Clay Proportions in Mixtures by X-ray Diffraction and Computerized Chemical Mass Balance**, by Mark Hodgson and A. W. L. Dudeney 19
- Expansion
 intercalation of CsCl-hydrazine-DMSO and kaolinite, procedure 125
 smectite, effect of oxidation state of octahedral Fe on 357
- F
- FANNING, D. S. (with S. W. BAILEY, G. W. BRINDLEY, H. KODAMA, and R. T. MARTIN), Report of The Clay Minerals Society Nomenclature Committee for 1982 and 1983 239
- FANNING, D. S. (with A. L. SENKAYI, J. B. DIXON, L. R. HOSSNER, and M. ABDER-RUHMAN), Mineralogy and Genetic Relationships of Tonstein, Bentonite, and Lignitic Strata in the Eocene Yegua Formation of East-Central Texas 259
- Faujasite
 -type zeolites, Co-, Ni-exchanged, phosphine adsorption on 74
- Ferrihydrite
 DTA, XRD, surface area, silica content 181
 formed by reaction of Fe(ClO₄)₂ and calcite, XRD, SEM 213
 synthesis by oxidation of FeCl₂ solutions 181
- Fiber
 chrysotile, single, clino- and ortho- types in, by HRTEM 429
 goethite prisms in iddingsite rims on olivine 1
 lepidocrocite, rods, laths, by TEM 167, 175
- Flavomononucleotide
 -smectite complex, UV-VIS 279
 adsorption on, interaction with smectite 279
 Mössbauer spectroscopy 279
- Flocculation
 influence of co-ion exclusion on measurements of 131
 kaolinite, effect of intercalation of Fe-, Al-polycation on 49
 montmorillonite, effect of intercalation of Fe-, and Al-polycation on 49
 soil clay, effect of intercalation of Fe-, Al-polycation on 49
- Fluorine
 fluor-hectorite, cross-linked with hydroxy-Al, synthesis, thermal stability, surface area, basal spacings 99
 NH₄F-treatment of DMSO-intercalated kaolinite to yield 10-Å hydrate of kaolinite 29
- Formamide
 -halloysite intercalate, XRD 241
 -intercalated kaolinite, NH₄F treatment of, to yield 10-Å hydrate of kaolinite 29
 intercalation method using, for differentiating halloysite from kaolinite 241, 249
 -kaolinite intercalate, XRD 241
- Formation of Iddingsite Rims on Olivine: A Transmission Electron Microscope Study**, by R. A. Eggleton 1

- FRANKEL, R. (with M. M. MORTLAND, J. G. LAWLESS, and H. HARTMAN), Smectite Interactions with Flavomononucleotide 279
- FRANKS, P. F., book review, *Sediment Diagenesis*, edited by A. Parker and B. W. Sellwood 486
- FRASER, A. R. (with M. B. MCBRIDE, and W. J. MCHARDY), Cu²⁺ Interaction with Microcrystalline Gibbsite: Evidence for Oriented Chemisorbed Copper Ions 12
- Free energy
of activation, Cu-, Fe-exchanged hectorite 327
of exchange, vermiculite 311
of formation, chlorites 205
- Free radical
formation, reaction of benzene with Cu-, Fe-hectorite 327
- FUKUSHIMA, YOSHIKI, X-ray Diffraction Study of Aqueous Montmorillonite Emulsions 320
- G
- GARRELS, R. M., Montmorillonite/Illite Stability Diagrams 161
- Gel
long XRD spacings from, apparent, due to total X-ray reflection 325
- GENT, M. P. N. (with B. L. SAWHNEY, P. J. ISAACSON, and R. K. KOZLOSKI), Polymerization of 2,6-Dimethylphenol on Smectite Surfaces 108
- Gibbsite
adsorption of Cu on 12
Cu-treated, IR, ESR, TEM 12
in bauxite, XRD, Al/Si ratios 139
in pallid zone clay, TEM, SAD 363
promotion of Cu hydrolysis, polymerization 12
- GIESE, R. F., JR. (with P. M. COSTANZO and C. V. CLEMENCY), Synthesis of 10-Å Hydrated Kaolinite 29
- GIESE, R. F., JR. (with P. M. COSTANZO and M. LIPICAS), Static and Dynamic Structure of Water in Hydrated Kaolinites. I. The Static Structure 419
- GILKES, R. J. (with R. R. ANAND), Weathering of Illmenite in a Lateritic Pallid Zone 363
- Gismondine
zeolite type P, XRD, SEM, Na, K content 433
- Glass
long XRD spacings from, apparent, due to total X-ray reflection 325
- Glauconite
nomenclature 239
- Gobbinsite
synthesis, XRD 433
- Goethite
Al-, effect of Al content on unit-cell dimensions 36
Al-, synthesis methods 36
formed by hydrolysis of Fe(ClO₄)₂ on calcite, XRD, SEM 213
formed by reaction of FeCl₂ solutions, influence of transition metals 334
TEM, HRTEM, in iddingsite rims on olivine 1
topotactic relation with olivine 1
weathering product of olivine 1
- GOLDEN, D. C. (with J. W. STUCKI, P. F. LOW, and C. B. ROTH), Effect of Oxidation State of Octahedral Iron on Clay Swelling 357
- GOLDEN, D. C. (with J. W. STUCKI and C. B. ROTH), Effects of Reduction and Reoxidation of Structural Iron on the Surface Charge and Dissolution of Dioctahedral Smectites 350
- GOLDEN, D. C. (with J. W. STUCKI and C. B. ROTH), Preparation and Handling of Dithionite-Reduced Smectite Suspensions 191
- Gouy-Chapman theory
treatment of co-ion exclusion measurements on montmorillonite, illite 131
- Green rust
stability, composition, charges in, during hydrolysis/oxidation of FeCl₂ solution 167, 175
- GOLDMAN, SANDRA (with R. J. DONAHOE and J. G. LIU), Synthesis and Properties of Zeolites in the System Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
- H
- Halloysite
distinction from kaolinite by formamide intercalation methods 241, 249
formamide-treated, XRD 241
in pallid zone clay, TGA, TEM, XRD 363
intercalation methods for distinction of, from kaolinite 249
relation to hydrated kaolinite 419
Utah, IR 419
- Hamaker constant
illite 400
kaolinite 400
montmorillonite 400
palygorskite 400
- HARRIS, W. G. (with L. W. ZELAZNY and J. C. BAKER), Depth and Particle Size Distribution of Talc in a Virginia Piedmont Ultisol 227
- HARSH, J. B. (with H. E. DONNER and M. B. MCBRIDE), Chemisorption of Copper on Hydroxy-Aluminum-Hectorite: An Electron Spin Resonance Study 407
- HARTMAN, H. (with M. M. MORTLAND, J. G. LAWLESS, and R. FRANKEL), Smectite Interactions with Flavomononucleotide 279
- Heat capacity
of dehydration, hydrated kaolinite, by DSC 419
- Hectorite
binding of Si(acac)₃⁺ on, to form PILC structures 93
cross-linked with hydroxy-Al, synthesis, surface area, basal spacings, thermal stability 99

- Fe-, Cu-exchanged reaction with benzene, kinetics, free radical formation 327
- Fe-, Cu-exchanged, activation energy, EPR 327
- hydrolysis of $\text{Si}(\text{acac})_3^+$ in interlayer of 93
- hydroxy-Al-, basal spacings 407
- hydroxy-Al-, chemisorption of Cu on, measured by ESR 407
- hydroxy-Al-, Cu-adsorbed-, ESR 407
- Ni-, Cu-exchanged, adsorption of phosphines on 74
- Ni-, Cu-exchanged, phosphine-adsorption complexes, reflectance spectroscopy of 74
- PILC structures with silicic acid 93
- Rh-phosphine complexes, IR, reflectance spectroscopy, XRD 195
- HELLER-KALLAI, L. (with A. SINGER, P. STOFFERS, and D. SZAFRANEK), Nontronite from a Deep-Sea Core from the South Pacific 375
- HELMY, A. K. (with N. PEINEMANN and C. Y. ANDREOLI), Use of the (02,11) X-ray Diffraction Reflections to Identify Clays 231
- Hematite
- Al-, synthesis, unit-cell parameters, IR, TEM 475
- formed by heating of ferrihydrite, XRD 181
- synthetic, Al-, XRD 157
- synthetic, color due to degree of Al substitution 157
- HENDRICKS, PAUL (with R. A. SCHOONHEYDT, JOZEFIE PELGRIMS, and JOHAN LUTS), Exchange and Spectroscopy of Cationic Rhodium Complexes on Hectorite 185
- High-pressure liquid chromatography (HPLC)
- identification of phenols on smectite 108
- High-resolution transmission electron microscopy (HRTEM) (see also Transmission electron microscopy)
- chrysotile, lattice defects in 429
- chrysotile, clino-, ortho- types in single fiber 429
- goethite, in iddingsite 1
- iddingsite rims on olivine 1
- olivine, alteration to iddingsite 1
- saponite domains in iddingsite 1
- Hisingerite
- origin in joints in basalt 272
- reaction with smectites 272
- XRD, SEM, DTA, chemical composition, TEM, electron diffraction 272
- Hisingerite Material from a Basalt Quarry near Geelong, Victoria, Australia**, by Ahmad Shayan 272
- HODGSON, MARK (with A. W. L. DUDENY), Estimation of Clay Proportions in Mixtures by X-ray Diffraction and Computerized Chemical Mass Balance 19
- HOSSNER, L. R. (with A. L. SENKAYI, J. B. DIXON, M. ABDER-RUHMAN, and D. S. FANNING), Mineralogy and Genetic Relationships of Tonstein, Bentonite, and Lignitic Strata in the Eocene Yegua Formation of East-Central Texas 259
- HOSSNER, L. R. (with R. H. LOEPPERT), Reactions of Fe^{2+} and Fe^{3+} with Calcite 213
- HPLC (see High-pressure liquid chromatography)
- HRTEM (see Transmission electron microscopy)
- Humic acid
- treatment, hydrolysis kinetics of agricultural organic chemicals on montmorillonite, kaolinite, affected by 67
- Hydrazine
- CsCl-DMSO intercalation of kaolinite, procedure 125
- induced luminescence in kaolin 58
- intercalated kaolinite, NH_4F treatment of, to yield 10-Å hydrate of kaolinite 29
- intercalation method for distinguishing kaolinite from halloysite, review 249
- Hydrobiotite
- nomenclature 239
- Hydrogen
- positions in dickite 483
- Hydrogen Positions in Dickite**, by P. K. Sen Gupta, E. O. Schlemper, W. D. Johns, and Fred Ross 483
- Hydrolysis
- Cu, promoted by gibbsite 12
- $\text{Fe}(\text{ClO}_4)_2$, to form lepidocrocite, goethite 213
- $\text{Fe}(\text{ClO}_4)_3$, to form ferrihydrite 213
- kinetics of agricultural organic chemicals on kaolinite, montmorillonite, affected by humic acid 67
- kinetics of agricultural organic chemicals on kaolinite, montmorillonite, relation to moisture content 67
- relation with Eh during oxidation of FeCl_2 solution 167
- $\text{Si}(\text{acac})_3^+$ to give PILC structures of silicic acid in hectorite, montmorillonite 93
- $\text{Si}(\text{acac})_3^+$ to silicic acid in interlayers of hectorite, montmorillonite 93
- time of, variation with $[\text{Cl}]/[\text{Fe}]$ 175
- Hydrolysis Kinetics of Organic Chemicals on Montmorillonite and Kaolinite Surfaces as Related to Moisture Content**, by M. M. El-Amamy and Theodor Mill 67
- Hydrothermal
- alteration of dolomite, formation of saponite by 147
- origin of illite/smectite, Sibert, France 154
- Hydroxyaluminum (Hydroxy-Al)
- hectorite, -fluorhectorite, cross-linked, synthesis, surface area, thermal stability, basal spacings 99
- hectorite, basal spacings 407
- hectorite, chemisorption of Cu on, by ESR 407
- hectorite, Cu-adsorbed, ESR 407
- Hydroxyl
- groups in kaolinite, adsorption of sulfate by displacement of 419

orientation in dickite 483
 role in hydrated kaolinite 419

I

Iddingsite

rims on olivine, goethite, saponite in 1
 rims on olivine, TEM, HRTEM, chemical analysis 1
 topotactic relation of goethite, saponite in, with olivine 1
 weathering product of olivine 1

Identification

differentiation of halloysite from kaolinite, by formamide intercalation 241, 249
 illite, by XRD, scheme 337
 use of XRD (02,11) reflection in clay identification 231

Illite

and illite/smectite, XRD identification procedures 337
 co-ion exclusion measurements, surface potential from 131
 colloidal suspensions, stability, coagulation, measured by photon correlation spectroscopy 400
 composition of solutions in equilibrium with 115
 effect of sodium carbonate treatment, XRD (02,11) reflection 231
 equilibrium solubility, controlled by pyrophyllite component 115
 /montmorillonite, solid solution vs. mixture of two phases 161
 /montmorillonite, stability diagrams 161
 nomenclature 239
 /smectite, ordered, Sibert, France, XRD, IR, DTA, chemical analysis 154
 solubility measurements of phases in 115
 Stern potential, Hamaker constant, critical coagulation constant 400
 use of XRD (02,11) reflection in identification 231

Ilmenite

alteration to anatase, pseudorutile, in lateritic pallid zone 363
 altered, petrography, TEM, EDX, XRD, SEM 363
 weathering of, in lateritic pallid zone 363

Imogolite

adsorption of Cu, Co 300
 cation, anion retention on 291
 ESR of Cu-, Co-exchanged 300
 IR, phosphate adsorption, ESR 291
 SiO₂/Al₂O₃, effect on surface charge 291

Influence of Aluminum on Iron Oxide, The. VIII. Unit-Cell Dimensions of Al-Substituted Goethites and Estimation of Al From Them, by D. G. Schulze 36

Influence of Aluminum Substitution on the Color of Synthetic Hematite, by V. Barron and J. Torrent 157

Influence of Chloride on the Formation of Iron Oxides from Fe(II) Chloride. I. Effect of [Cl]/[Fe] on the Formation of Magnetite, by R. M. Taylor 167

Influence of Chloride on the Formation of Iron Oxides from Fe(II) Chloride. II. Effect of [Cl] on the Formation of Lepidocrocite and Its Crystallinity, by R. M. Taylor 175

Influence of Transition Metals on the Formation of Iron Oxides During the Oxidation of Fe(II)Cl₂ Solution, by Zahurul Karim 334

Infrared spectroscopy (IR)

allophene 291
 bentonite, Texas 259
 gibbsite, Cu-treated 12
 halloysite, Utah 419
 hectorite-Rh-phosphine complexes 185
 hematite, synthetic Al- 475
 hisingerite, from joints in basalt 271
 identification of polymerized phenols on smectite by 108
 illite/smectite, Sibert, Rhone, France 154
 imogolite 291
 kaolinite, Cornwall 419
 kaolinite, Gujarat, India 414
 kaolinite, hydrated 419
 lepidocrocite, by oxidation of FeCl₂ solutions 175
 nontronite-rich clay, deep-sea core 375
 saponite, Allt Ribheim, Skye 147
 saponite, Ballarat, California 147
 Si(acac)₃⁺ adsorbed on montmorillonite 93
 soil clays 291
 talc-containing Ultisol 227

INOUE, ATSUYUKI, Thermodynamic Study of Na-Ca-K Exchange Reactions in Vermiculite 311

Interactions of Polycations of Aluminum and Iron with Clays, by J. M. Oades 49

Intercalate

aniline-vermiculite crystal structure, three-dimensional ordering 223
 CsCl-hydrazine-DMSO of kaolinite, procedure 125
 DMSO, formamide-, hydrazine-intercalates of kaolinite, NH₄ treatment of, to yield 10-Å hydrate 29
 DMSO-kaolinite intercalate, methanol washing to yield 10-Å hydrate of kaolinite 29
 Fe-, Al-polycations and kaolinite, effect on surface area, flocculation, water uptake, CEC, basal spacings 49
 Fe-, Al-polycations and montmorillonite, effect on surface area, flocculation, water uptake, CEC, basal spacings 49
 Fe-, Al-polycations and soil clay, effect on surface area, flocculation, water uptake, CEC, basal spacings 49

- halloysite-formamide, XRD 241
- intercalation method for differentiating kaolinite from halloysite, using formamide 219, 241
- intercalation methods for distinguishing kaolinite from halloysite, comparison 249
- kaolinite-formamide, XRD 241
- of DMSO to form hydrated kaolinite 419
- PILC structure of silicic acid and hectorite, montmorillonite 93
- Intercalation Method Using Formamide for Differentiating Halloysite from Kaolinite**, by G. J. Churchman, J. S. Whitton, G. G. C. Claridge, and B. K. G. Theng 241
- Interlayer**
- cation ordering in micas, review 81
- hydrolysis of $\text{Si}(\text{acac})_3^+$ in, of montmorillonite, hectorite 93
- silicic acid in, to give PILC structures 93
- Interstratification**
- apparent long XRD spacings due to total X-ray reflection 235
- corrensite, crystal chemistry, review 391
- illite/smectite, identification procedures by XRD 337
- illite/smectite, Sibert, France, XRD, IR, chemical analysis, DTA 154
- montmorillonite/illite, solid solutions vs. mixtures of two phases 161
- montmorillonite/illite, stability diagrams 161
- regular, formed 15-Å, 10-Å members, Na-, K-, Ca-exchanged vermiculite 311
- regular, nomenclature 239
- Interstratified Illite/Smectite Mineral from the Hydrothermal Deposit in Sibert, Rhone, France, An**, by D. Beaufort 154
- IR (see Infrared spectroscopy)**
- Iron**
- dissolution from nontronite by citrate-bicarbonate, citrate-bicarbonate-dithionite treatment 350
- exchanged hectorite, activation energy, EPR 327
- exchanged hectorite, reaction with benzene 327
- Fe-polycations, intercalated with montmorillonite, kaolinite, soil clay, effect on surface area, flocculation, electrophoresis, water uptake, CEC 49
- ferrihydrate synthesis by oxidation of FeCl_2 solutions 167, 175
- ferripyrophyllite, cation distribution, Mössbauer spectra, magnetic properties 198
- free, in talc-containing Ultisol 227
- goethite, Al-, effect of Al content on unit-cell dimensions 36
- goethite, Al-, synthesis methods 36
- hematite, Al-, synthesis, TEM, IR, unit-cell parameters 475
- hematite, synthetic, color related to Al substitution 157
- magnetite, lepidocrocite synthesis by oxidation of FeCl_2 solution 167, 175
- nontronite, deep-sea core, XRD, IR, TEM, Mössbauer spectroscopy, surface area, chemical composition, isotope composition, DTA 375
- nontronite, deep-sea core, age, origin 375
- nontronite, preparation, handling of dithionite-reduced 191
- octahedral, effect of oxidation state on smectite swelling 357
- oxide formation by oxidation of FeCl_2 solution 334
- oxides formed on calcite by hydrolysis of $\text{Fe}(\text{ClO}_4)_2$, $\text{Fe}(\text{ClO}_4)_3$ solutions 213
- oxides, effect of dissolution on CEC of soil clays 283
- oxides, influence of transition metals on formation 334
- reactions with calcite 213
- rich smectites, relation with hisingerite 272
- structural, effect of oxidation, reduction on dissolution, surface charge of montmorillonite, nontronite 350
- ISAACSON, P. J. (with B. L. SAWHNEY, R. K. KOZLOSKI, and M. P. N. GENT), Polymerization of 2,6-Dimethylphenol on Smectite Surfaces 108
- Isoelectric point (see also Zero point of charge)
- marine clay, site of South Nation River, Canada, landslide 384
- Isotopic composition**
- oxygen, nontronite, deep-sea core 375
- strontium, nontronite, deep-sea core 375
- J**
- JOHNS, W. D. (with P. K. Sen Gupta, E. O. Schlemper, and FRED ROSS), Hydrogen Positions in Dickite 483
- K**
- Kaolin (see also Kaolinite)**
- minerals, interpretation of NMR spectra 233
- in soil clay, effect of sodium carbonate treatment on XRD (02,11) reflection 231
- use of XRD (02,11) reflection in identification 231
- Kaolinite (see also Kaolin)**
- adsorption of molybdate, chlorate on 45
- amine-induced luminescence in 58
- colloidal suspensions, stability, coagulation, measured by photon correlation spectroscopy 400
- Cornwall, XRD, surface area, CEC 58
- Cornwall, IR 419
- distinction from halloysite by formamide intercalation methods 241, 249
- Fe-, Al-polycation intercalation, effect on CEC, surface area, flocculation, electrophoresis, water uptake 49

- Fisher, XRD, surface area, CEC 58
 formamide-treated, XRD 24
 hydrated, kinetics of dehydration, TGA 419
 hydrated, static structure of water in, by DSC, IR 419
 hydrated, synthesis using NH_4F , DMSO 419
 hydrolysis of agricultural organic chemicals on, relation to moisture content, humic acid treatment 67
 in pallid zone clay, SEM, TEM, TGA 363
 intercalation methods for distinction of, from halloysite 249
 intercalation of CsCl -hydrazine-DMSO, procedure
 interpretation of NMR spectra 233
 morphological changes during resilication of bauxite 139
 quantitative mineralogy from XRD and chemical mass balance 19
 resilication product of bauxite, XRD, Al/Si ratio 139
 SEM 139
 Stern potential, Hamaker constant, critical coagulation constant 400
 sulfate adsorption, ligand exchange 414
 sulfate adsorption, mechanism, mono-, bidentate, complex formation 414
 10-Å hydrate, synthesis by methanol washing of kaolinite-DMSO intercalate 29
 10-Å hydrate, XRD 29
 10-Å, synthesis by NH_4F treatment of kaolinite-DMSO, -formamide, -hydrazine intercalates 29
 vermicular, in tonstein, XRD, SEM, petrography 259
- KARIM, ZAHURUL, Characteristics of Ferrihydrites Formed by Oxidation of FeCl_2 Solutions Containing Different Amounts of Silica 181
- KARIM, ZAHURUL, Influence of Transition Metals on the Formation of Iron Oxides During the Oxidation of Fe(II)Cl_2 Solution 334
- KELLER, W. D. (with O. M. CLARKE, JR.), Resilication of Bauxite at the Alabama Street Mine, Saline County, Arkansas, Illustrated by Scanning Electron Micrographs 139
- Kimberlite
 alteration products, quantitative mineralogy 19
 alteration products, thermal treatment, XRD 19
- Kinetics
 dehydration of hydrated kaolinite, by DSC 419
 hydrolysis of agricultural organic chemicals on kaolinite, montmorillonite, affected by humic acid 67
 hydrolysis of agricultural organic chemicals on montmorillonite, kaolinite, relation to moisture content 67
 reaction of benzene with Cu-, Fe-hectorite 327
- KITTRICK, J. A., Solubility Measurements of Phases in Three Illites 115
- KITTRICK, J. A. (with P. E. ROSENBERG and J. R. ALLDREDGE), Composition of the Controlling Phase in Muscovite Equilibrium Solubility 480
- KLOEPPING, ROGER (with L. M. COYNE and GLENN POLLACK), Room-Temperature Luminescence from Kaolin Induced by Organic Amines 58
- KODAMA, H. (with S. W. BAILEY, G. W. BRINDLEY, D. S. FANNING, and R. T. MARTIN), Report of The Clay Minerals Society Nomenclature Committee for 1982 and 1983 239
- KOZLOSKI, R. K. (with B. L. SAWHNEY, P. J. ISAACSON, and M. P. N. GENT), Polymerization of 2,6-Dimethylphenol on Smectite Surfaces 108
- L
- Landslide
 South Nation River, Canada, effect of pH on rheology on marine clay from site of 584
- Langmuir equation
 interpretation of MoO_4^{2-} adsorption on kaolinite 45
- Laterite
 weathering of ilmenite in laterite pallid zone 363
- LAWLESS, J. G. (with M. M. MORTLAND, H. HARTMAN, and R. FRANKEL), Smectite Interactions with Flavomononucleotide 279
- Layer charge
 nontronite, deep-sea core 375
- Layer stacking
 in aqueous montmorillonite emulsions, XRD 329
- Lepidocrocite
 crystallinity, affected by Cl concentration 175
 formation of FeCl_2 solutions, TEM 167, 175
 formed by oxidation of FeCl_2 solution, influence of transition metals on 334
 formed by reaction of calcite and $\text{Fe(ClO}_4)_2$ solution, XRD, SEM 213
 from oxidation of FeCl_2 solutions, XRD 167, 175, 184
 surface area 181
- Lepidolite
 cation ordering in, review 81
- Leucoxene
 by alteration of ilmenite on lateritic pallid zone 363
 XRD, TEM, SEM, EDX petrography 363
- Ligand
 displacement of, from gibbsite surface by NH_3 , effect on Cu adsorption 12
 exchange for sulfate adsorption on kaolinite 414
 -exchange reactions of Cu adsorbed on allophane, imogolite 300
 field parameters of complexes of Ni-exchanged zeolites and phosphines 74

- field parameters of complexes of Ni-hectorite and phosphines 74
- Light**
 emission luminescence of amine-treated kaolin 58
 scattering, photon correlation spectroscopy measurement of colloidal clay suspensions 58
- Lignite**
 clinoptilolite formation in 259
 stratigraphic relation to tonstein, bentonite, Texas 259
- LIU, J. G. (with R. J. DONAHOE and SANDRA GULDMAN), Synthesis and Properties of Zeolites in the System $\text{Na}_2\text{O}-\text{K}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ 433
- LIPSICAS, M. (with P. M. COSTANZO and R. F. GIESE, JR.), Static and Dynamic Structure of Water in Hydrated Kaolinites. I. The Static Structure 419
- LOEPPERT, R. H. (with L. R. HOSSNER), Reactions of Fe^{2+} and Fe^{3+} with Calcite 213
- LOW, P. F. (with J. W. STUCKI, C. B. ROTH, and D. C. GOLDEN), Effect of Oxidation State of Octahedral Iron on Clay Swelling 357
- Low-angle scattering**
 aqueous montmorillonite emulsions 320
- Luminescence**
 kaolin, induced by organic amines 58
 kaolin, induced by organic amines, effect of heat treatment, gamma-irradiated 58
- LUTS, JOHAN (with R. A. SCHOONHEYDT, JOSEFIEN PELGRIMS, and PAUL HENDRICKX), Exchange and Spectroscopy of Cationic Rhodium Complexes on Hectorite 185
- M**
- Maghemite**
 formed by prolonged drying of magnetite, XRD, 167
- Magnetic properties**
 ferripyrophyllite, Curie temperature, magnetic ordering temperature 198
- Magnetite**
 from oxidation of FeCl_2 solutions, XRD, TEM 167
- MANOS, C. G., JR. (with M. M. MORTLAND and T. J. PINNAVAIA), Tris(acetylacetonato)silicon(IV) Binding to Montmorillonite and Hydrolysis to Interlayer Silicic Acid 93
- Margarite**
 cation ordering in review 81
- MARTIN, R. T. (with S. W. BAILEY, G. W. BRINDLEY, D. S. FANNING, and H. KODAMA), Report of The Clay Minerals Society Nomenclature Committee for 1982 and 1983 239
- Mass spectrometry**
 identification of polymerized phenols on smectite 108
- MATTIGOD, S. V. (with P. J. PHELEN), Adsorption of Molybdate Anion (MoO_4^{2-}) by Sodium-Saturated Kaolinite 45
- Maximum degree of ordering (MDO) (see Ordering)
- MCBRIDE, M. B. (with NANCY CAVALLERO), Effect of Selective Dissolution on Charge and Surface Properties of an Acid Soil Clay 283
- MCBRIDE, M. B. (with C. J. CLARK), Cation and Anion Retention by Natural and Synthetic Allophane and Imogolite 291
- MCBRIDE, M. B. (with C. J. CLARK), Chemisorption of Cu(II) and Co(II) on Allophane and Imogolite 300
- MCBRIDE, M. B. (with A. R. FRASER and W. J. MCHARDY), Cu^{2+} Interaction with Microcrystalline Gibbsite: Evidence for Oriented Chemisorbed Copper Ions 12
- MCBRIDE, M. B. (with J. B. HARSH and H. E. DONNER), Chemisorption of Copper on Hydroxy-Aluminum-Hectorite: An Electron Spin Resonance Study 407
- MCHARDY, W. J. (with M. B. MCBRIDE and A. R. FRASER), Cu^{2+} Interaction with Microcrystalline Gibbsite: Evidence for Oriented Chemisorbed Copper Ions 12
- MDO (maximum degree of ordering) (see Ordering)
- Mechanism of Sulfate Adsorption by Kaolinite**, by S. M. Rao and A. Sridharan 414
- Meeting announcement**
 21st annual meeting, The Clay Minerals Society 238
 Short Course on Micaceous Minerals, Mineralogical Society of America 160
 Symposium, Clay Minerals in Agriculture, Industry, and the Environment 238
 ZEOLITE '85: An International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites 520
- Merlinoite**
 occurrence in saline, alkaline lake deposit 433
 similarity of XRD pattern to phillipsite 433
 synthesis, XRD, SEM, Na, K content 433
- Methanol**
 washing of kaolinite-DMSO intercalate to yield 10-Å hydrate of kaolinite 29
- Methylformamide, N-**
 treatment to distinguish kaolinite from halloysite 241
- Mica** (see also individual minerals)
 cation ordering in, review 81
 composition of controlling phase in equilibrium solubility of muscovite 480
 MDO polytypes, classification, abundance 464
 MDO polytypes, derivation, symbols 453
 MDO polytypes, ordering of octahedral cations 81, 453, 464
 muscovite, North Carolina, chemical analysis 480
 short course on, announcement 160

- MILL, THEODOR** (with M. M. EL-AMAMY), Hydrolysis Kinetics of Organic Chemicals on Montmorillonite and Kaolinite Surfaces as Related to Moisture Content 67
- Mineralogical analysis**
 apparent long XRD spacings from clay gels, glass, crystalline materials 235
 differentiation of kaolinite from halloysite, comparison methods 249
 differentiation of kaolinite from halloysite, formamide intercalation methods 241, 249
 quantitative, of clay proportions, from XRD and computerized chemical mass balance 19
 talc, in Ultisol 227
 use of (02,11) XRD reflection, for clay mineral identification 231
 XRD identification procedures for illitic materials 337
- Mineralogy and Genetic Relationships of Tonstein, Bentonite, and Lignitic Strata in the Eocene Yegua Formation of East-Central Texas**, by A. L. Senkayi, J. B. Dixon, L. R. Hossner, M. Abder-Ruhman, and D. S. Fanning 259
- Mixed layering** (see also Interstratification)
 chlorite/saponite, chlorite/vermiculite, chlorite/montmorillonite, corrensite, statistical analysis of chemical composition 391
 illite/smectite, Sibert, France, XRD, DTA, IR, chemical analysis 154
 montmorillonite/illite stability diagrams 161
- Mössbauer spectroscopy**
 ferripyrophyllite 198
 nontronite, deep-sea core 375
 smectite-flavomononucleotide complex 279
- Molecular sieve** (see also Zeolite)
 potential of cross-linked hydroxy-Al hectorites 99
- MOLL, W. F.**, Obituary—George W. Brindley 80
- Molybdate**
 adsorption of kaolinite 45
- Monodentate**
 formation in sulfate adsorption on kaolinite 44
- Montmorillonite** (see also Bentonite, Smectite)
 binding of $\text{Si}(\text{acac})_3^+$ on, to form PILC structures 93
 /chlorite interstratifications, corrensite, b-dimensions, chemical compositions, statistical analysis 391
 co-ion exclusion measurements, surface potential from 131
 colloidal suspension, stability, coagulation, measured by photon correlation spectroscopy 400
 emulsions, aqueous, XRD, layer stacking 320
 Fe-, Al-polycation intercalation, effect on CEC, surface area, flocculation, electrophoresis, water uptake, basal spacings 49
 hydrolysis of agricultural organic chemicals on, relation to moisture content, humic acid treatment 67
 hydrolysis of $\text{Si}(\text{acac})_3^+$ in interlayers of 93
 /illite, solid solution vs. mixture of two phases 161
 /illite, stability diagrams 161
 PILC structures with silicic acid, synthesis 93
 Stern potential, Hamaker constant, critical coagulation constant 400
- Montmorillonite/Illite Stability Diagrams**, by R. M. Garrels 161
- Morphology**
 allophane in bauxite, Alabama Street Mine, Arkansas 139
 alteration products of olivine in iddingsite rims 1
 calcite, after $\text{Fe}(\text{ClO}_4)_2$, $\text{Fe}(\text{ClO}_4)_3$ treatment, SEM 213
 changes in, to follow resilication of bauxite 139
 gibbsite in bauxite, Alabama Street Mine, Arkansas 139
 halloysite, kaolinite, anatase in weathered ilmenite 363
 hematite, synthetic Al-, TEM 475
 iron oxide coatings on calcite 213
 kaolinite in bauxite, Alabama Street Mine, Arkansas 139
 kaolinite, smectite, halloysite in tonstein 259
 lepidocrocite, from oxidation of FeCl_2 solution 167, 175
 magnetite, from oxidation of FeCl_2 solution 267
 merlinoite, synthetic, natural, SEM 433
 nontronite, deep sea 375
 phillipsite, synthetic, natural, SEM 433
 zeolite P₁, synthetic, SEM 433
 zeolite W, synthetic, SEM 433
 zeolite ZK-19, synthetic, SEM 433
- MORTLAND, M. M.** (with J. G. LAWLESS, H. HARTMAN, and R. FRANKEL), Smectite Interactions with Flavomononucleotide 279
- MORTLAND, M. M.** (with C. G. MANOS, JR. and T. J. PINNAVAIA), Tris(acetylacetonato)silicon(IV) Binding to Montmorillonite and Hydrolysis to Interlayer Silicic Acid 93
- Muscovite**
 cation ordering in, review 81
 composition of controlling phase in equilibrium solubility 480
 North Carolina, chemical analysis 480
- N
- Nacrite**
 interpretation of NMR spectra 233
- Negative adsorption** (see Co-ion exclusion)
- Nickel**
 -exchanged hectorite, zeolite Y, adsorption of phosphines on 74
- NMR** (see Nuclear magnetic resonance)

- Nomenclature**
 glauconite 239
 illite 239
 regular interstratifications 239
 report of Nomenclature Committee of The Clay Minerals Society for 1982, 1983 239
- Nontronite**
 deep-sea core, age, origin 375
 deep-sea core, XRD, TEM, IR, Mössbauer spectroscopy, isotope composition, surface area, layer charge, DTA 375
 dithionite-reduced, preparation, handling 191
 Garfield, Washington, CEC, unit-cell composition, surface area 350
 surface charge, dissolution, effect of oxidation, reduction of structural Fe on 350
 swelling, effect of oxidation state of octahedral Fe on 357
- Nontronite from a Deep-Sea Core from the South Pacific**, by A. Singer, P. Stoffers, L. Heller-Kallai, and D. Szafranek 375
- NOVICH, B. E. (with T. A. RING), Colloid Stability of Clays Using Photon Correlation Spectroscopy 400
- Nuclear magnetic resonance (NMR)**
 kaolin-group minerals, interpretation of spectra 233
- Nuclear waste repository**
 thermal expansion, contraction of clinoptilolite as function of exchangeable cations 444
- O**
- OADES, J. M., Interactions of Polycations of Aluminum and Iron with Clays 49
- Obituary**
 Brindley, George W. 80
- Obituary—George W. Brindley**, by W. F. Moll 80
- Octahedral cations**
 effect of oxidation state of Fe on nontronite swelling 357
 ordering in ferripyrophyllite 198
 ordering in micas, review 81
 ordering, MDO mica polytypes, classification, abundance 464
 ordering, mica MDO polymorphs, symbols 453, 464
- Olivine**
 iddingsite rims on, TEM, HRTEM, chemical analysis 1
 topotactic relation with goethite, saponite derived from 1
 weathering to iddingsite, goethite, saponite 1
- Ordering**
 cation, in micas, review 81
 MDO polytypes of micas, classification, abundance 464
 MDO polytypes of micas, derivation, symbols 453
- ordered illite/smectite, XRD identification procedures 337
 three-dimensional, in aniline-vermiculite intercalate 223
- Organo clay**
 adsorption of 2,6-dimethylphenol on smectite 108
 adsorption of benzene on Cu-, Fe-hectorite 327
 adsorption of flavomononucleotide on smectite 279
 smectite-flavomononucleotide complex, UV-VIS, Mössbauer spectroscopy 279
- Oxidation**
 effect of oxidation state of octahedral Fe on smectite swelling 357
 FeCl₂ solution, to form ferrihydrite 181
 FeCl₂ solution, to form goethite 334
 FeCl₂ solution, to form lepidocrocite 167, 171, 334
 FeCl₂ solution, to form magnetite 167, 171
 reoxidation of dithionite-reduced smectite 191
 structural Fe, effect of, on dissolution, surface charge of montmorillonite, nontronite 350
- P**
- Palygorskite**
 colloidal suspension, stability, coagulation measured by photon correlation spectroscopy 400
 Stern potential, Hamaker constant, critical coagulation constant 400
- PANNELL, K. H. (with M. P. EASTMAN and D. E. PATTERSON), Reactions of Benzene with Cu(II)- and Fe(III)-Exchanged Hectorites 327
- Paragonite**
 cation ordering in, review 81
- PASHLEY, R. M. (with D. Y. C. CHAN and J. P. QUIRK), Surface Potentials Derived from Co-ion Exclusion Measurements on Homoionic Montmorillonite and Illite 131
- PATTERSON, D. E. (with M. P. EASTMAN and K. H. PANNELL), Reactions of Benzene with Cu(II)- and Fe(III)-Exchanged Hectorites 327
- PEINEMANN, N. (with A. K. HELMY and C. Y. ANDREOLI), Use of the (02,11) X-ray Diffraction Reflections to Identify Clays 231
- PELGRIMS, JOSEFIEN (with R. A. SCHOONHEYDT, PAUL HENDRICKX, and JOHAN LUTS), Exchange and Spectroscopy of Cationic Rhodium Complexes on Hectorite 185
- Petrography**
 anatase, in altered ilmenite, Australia 363
 bentonite, Texas 259
 hisingerite material, Australia 272
 ilmenite, altered, Australia 363
 tonstein, Texas 259
- pH**
 effect of on rheology of marine clay 384

- Phase equilibria**
 equilibrium solubility of illite 115
 montmorillonite/illite stability diagrams 161
- PHELEN, P. J.** (with S. V. MATTIGOD), Adsorption of Molybdate Anion (MoO_4^{2-}) by Sodium-Saturated Kaolinite 45
- Phengite**
 cation ordering in, review 81
- Phenol**
 products, polymerized on smectite, identification by IR, UV-VIS, Mössbauer spectroscopy, HPLC, ESR 108
 2,6-dimethyl, polymerization on smectite 108
- Phillipsite**
 similarity of XRD pattern with merlinoite 433
 synthesis, XRD, SEM, Na, K content 433
- Phosphine complex**
 adsorbed on hectorite, reflectance spectroscopy, IR 74, 185
 adsorption on hectorite 74, 185
 adsorption on zeolite Y 74
 ion exchanged on hectorite, IR, reflectance spectroscopy 185
- Phosphorus**
 adsorption on imogolite, allophane, soil clay 291
- Photon correlation spectroscopy**
 coagulation of clay suspensions, measured by 400
 measurement of colloid stability of clays by 400
- PILC** (see Pillared interlayer complex)
- Pillared interlayer complexes (PILC)**
 hydroxy-Al-hectorite, fluorhectorite, synthesis, properties 99
 silicic acid and hectorite, montmorillonite, by hydrolysis of adsorbed $\text{Si}(\text{acac})_3^+$ 93
- PINNAVAIA, T. J.** (with C. G. MANOS, JR. and M. M. MORTLAND), Tris(acetylacetonato)silicon(IV) Binding to Montmorillonite and Hydrolysis to Interlayer Silicic Acid 93
- PIRNAT, MARIA** (with J. K. TORRANCE), Effect of pH on the Rheology of Marine Clay from the Site of the South Nation River, Canada, Landslide of 1971 384
- Plasticity**
 saponite, Ballarat, California 147
- POLLACK, GLENN** (with L. M. COYNE and ROGER KLOEPPING), Room-Temperature Luminescence from Kaolin Induced by Organic Amines 58
- Polycations**
 Al-, Fe(III)-, interaction with montmorillonite, kaolinite, soil clay 49
 Al-, Fe(III)-, size, preparation 49
- Polymerization**
 Cu^{2+} , promotion by gibbsite 12
 products of phenols on smectite, identification by IR, UV-VIS, HPLC, Mössbauer spectroscopy, ESR 48
 2,6-dimethylphenol on smectite 108
- Polymerization of 2,6-Dimethylphenol on Smectite Surfaces**, by B. L. Sawhney, R. Z. Kozloski, P. J. Isaacson, and M. P. N. Gent 108
- Polytype**
 MDO, micas, classification, abundance 464
 MDO, micas, derivation, symbols 453
- Polytypism of Micas. I. MDO Polytypes and Their Derivation**, by K.-O. Backhaus and S. Đurovič 453
- Polytypism of Micas. II. Classification and Abundance of MDO Polytypes**, by K.-O. Backhaus, S. Đurovič, and Z. Weiss 464
- POPPI, LUCIANO** (with M. F. BRIGATTI), Crystal Chemistry of Corrensite: A Review 391
- POST, J. L.**, Saponite from Near Ballarat, California 147
- Potassium acetate**
 method for distinguishing kaolinite from halloysite, review 249
- Preparation and Handling of Dithionite-Reduced Smectite Suspensions**, by J. W. Stucki, D. C. Golden, and C. B. Roth 191
- Protolithionite**
 cation ordering in, review 81
- Pyridine**
 -induced luminescence in kaolin 58
- Pyrophyllite**
 ferri-, cation distribution, Mössbauer spectroscopy, magnetic properties 198
 ferri-, paramagnetic Curie temperature, magnetic ordering temperature 198
 solution-controlling phase in illites 115
- Q**
- Quantitative mineralogy** (see also Mineralogical analysis) clay proportions, from XRD and computerized chemical mass balance 19
- Quinone**
 products of polymerization of phenols on smectite, identification by IR, UV-VIS, HPLC, ESR, Mössbauer spectroscopy 108
 quinoline-induced luminescence in kaolin 58
- QUIRK, J. P.** (with D. Y. C. CHAN and R. M. PASHLEY), Surface Potentials Derived from Co-ion Exclusion Measurements on Homoionic Montmorillonite and Illite 131
- R**
- RAO, S. M.** (with A. SRIDHARAN), Mechanism of Sulfate Adsorption by Kaolinite 414
- Rare earth elements**
 La-, Ce-hectorite, cross-linked with hydroxy-Al oligomers, XRD, IR, surface area, chemical composition 99
- Reactions of Benzene with Cu(II)- and Fe(III)-Exchanged Hectorites**, by M. P. Eastman, D. E. Patterson, and K. H. Pannell 327
- Reactions of Fe^{2+} and Fe^{3+} with Calcite**, by R. H. Loepfert and L. R. Hossner 213

- Rectorite**
illite/smectite, ordered, Sibert, France, XRD, IR, DTA, chemical analysis 154
- Reduction**
effect of oxidation state of octahedral Fe on smectite swelling 357
preparation, handling of dithionite-reduced smectites 191
structural Fe, effect of, on dissolution, surface charge of montmorillonite, nontronite 350
- Referees**
technical, volume 32, *Clays and Clay Minerals* 488
- Reflectance spectroscopy**
hectorite, Rh-complex-adsorbed, assignment of spectra 185
hectorite-phosphine complex 74
hectorite-Rh-phosphine complexes 185
NO₂, CO₂, C₂H₂, C₂H₄ adsorbed on hectorite, zeolite Y 74
zeolite Y-phosphine complex 74
- Regular Solution Site-Mixing Model for Chlorites**, by R. K. Stoessel 205
- Relation of Infrared, Crystallochemical, and Morphological Properties of Al-Substituted Hematites**, by V. Barron, J. L. Rendon, J. Torrent, and C. J. Serna 475
- Remolded strength**
marine clay, effect of pH on 384
- RENDON, J. L.** (with V. BARRON, J. TORRENT, and C. J. SERNA), *Relation of Infrared, Crystallochemical, and Morphological Properties of Al-Substituted Hematites* 475
- Report of The Clay Minerals Society Nomenclature Committee for 1982 and 1983**, by S. W. Bailey, G. W. Brindley, D. S. Fanning, H. Kodama, and R. T. Martin 239
- Resilication of Bauxite at the Alabama Street Mine, Saline County, Arkansas, Illustrated by Scanning Electron Micrographs**, by W. D. Keller and O. M. Clarke, Jr. 139
- Review of Cation Ordering in Micaceous Minerals**, by S. W. Bailey 81
- Rheology**
properties, marine clay, effect of pH on 384
saponite, Ballarat, California 147
- Rhodium**
-phosphine-hectorite complexes, synthesis, IR, reflectance spectroscopy, XRD 185
- RING, T. A.** (with B. E. NOVICH), *Colloid Stability of Clays Using Photon Correlation Spectroscopy* 400
- Room-Temperature Luminescence from Kaolin Induced by Organic Amines**, by L. M. Coyne, Glenn Pollack, and Roger Kloepping 58
- ROSELL, MARIA** (with J. SHABTAI and M. TOKARZ), *Cross-linked Smectites. III. Synthesis and Properties of Hydroxy-Aluminum Hectorites and Fluorhectorites* 99
- ROSENBERG, P. E.** (with J. A. KITTRICK and J. R. ALLDREDGE), *Composition of the Controlling Phase in Muscovite Equilibrium Solubility* 480
- ROSS, FRED** (with P. K. SEN GUPTA, E. O. SCHLEMPER, and W. D. JOHNS), *Hydrogen Positions in Dickite* 483
- ROTH, C. B.** (with J. W. STUCKI and D. C. GOLDEN), *Preparation and Handling of Dithionite-Reduced Smectite Suspensions* 191
- ROTH, C. B.** (with J. W. STUCKI and D. C. GOLDEN), *Effects of Reduction and Reoxidation of Structural Iron on the Surface Charge and Dissolution of Dioctahedral Smectites* 350
- ROTH, C. B.** (with J. W. STUCKI, P. F. LOW, and D. C. GOLDEN), *Effect of Oxidation State of Octahedral Iron on Clay Swelling* 357
- Rutile**
pseudo-, alteration of ilmenite in lateritic pallid zone, by 363
pseudo-, petrography, TEM, SEM, EDX, XRD 363

S

SAD (see Selected area diffraction)

Saline lake

merlinoite occurrence in 433

zeolite diagenesis in 433

Salinity

influence of, on remolded strength of marine clay 384

Saponite (see also Smectite)

Allt Ribhein, Skye, IR 147

American Canyon, California, chemical analysis 147

Ballarat, California, XRD, IR, DTA, TGA, chemical analysis, engineering properties 147

/chlorite interstratification, corrensite, chemical compositions, b-dimensions, statistical analysis 391

iddingsite rims on olivine, HRTEM 1

relation with hisingerite 272

topotactic relation with olivine 1

Saponite from Near Ballarat, California, by J. L. Post 147

Saprolite

talc in Ultisol developed on 227

SAWHNEY, B. L. (with R. K. KOZLOSKI, P. J. ISAACSON, and M. P. N. GENT), *Polymerization of 2,6-Dimethylphenol on Smectite Surfaces* 108

Scanning electron microscopy (SEM)

allophane, bauxite resilication product, Alabama Street Mine, Arkansas 139

calcite, following Fe(ClO₄)₃, Fe(ClO₄)₂ treatments 213

- gibbsite, bauxite resilication product, Alabama Street Mine, Arkansas 139
- goethite, precipitate on calcite 213
- halloysite, smectite in tonstein-bentonite transition zone 259
- kaolinite, bauxite resilication product, Alabama Street Mine, Arkansas 139
- lepidocrocite precipitate on calcite 213
- merlinoite, synthetic, natural 433
- morphological changes followed by, during resilication of bauxite 139
- phillipsite, synthetic, natural 433
- zeolite P, synthetic 433
- zeolite W, synthetic 433
- zeolite ZK-19, synthetic 433
- SCHLEMPER, E. O. (with P. K. SEN GUPTA, W. D. JOHNS, and FRED ROSS), Hydrogen Positions in Dickite 483
- SCHOONHEYDT, R. A. (with JOZEFIE PELGRIMS, PAUL HENDRICKX, and JOHAN LUTS), Exchange and Spectroscopy of Cationic Rhodium Complexes on Hectorite 185
- SCHOONHEYDT, R. A. (with RUDI VAN OVERLOOP, MATHEU VAN HOVE, and JOHAN VERLINDEN), Complexes of Trimethylphosphine and Dimethylphenylphosphine with Co(II) and Ni(II) on Hectorite and on Zeolites X and Y 74
- SCHULZE, D. G., The Influence of Aluminum on Iron Oxide. VIII. Unit-Cell Dimensions of Al-Substituted Goethites and Estimation of Al From Them 36
- Selected area diffraction (SAD)
- anatase 363
 - gibbsite 363
 - halloysite 363
 - kaolinite 363
 - pseudorutile 363
- SEM (see Scanning electron microscopy)
- SEN GUPTA, P. K. (with E. O. SCHLEMPER, W. D. JOHNS, and FRED ROSS), Hydrogen Positions in Dickite 483
- SENKAYI, A. L. (with J. B. DIXON, L. R. HOSSNER, M. ABDER-RUHMAN, and D. S. FANNING), Mineralogy and Genetic Relationships of Tonstein, Bentonite, and Lignitic Strata in the Eocene Yegua Formation of East-Central Texas 259
- Sepiolite
- Ballarat, California, associated with saponite 147
 - gel, apparent long XRD spacings from, due to total X-ray reflection 235
- SERNA, C. J. (with V. BARRON, J. L. RENDON, and J. TORRENT), Relation of Infrared, Crystallochemical, and Morphological Properties of Al-Substituted Hematites 475
- Serpentine (see also individual minerals)
- quantitative mineralogy, from XRD and chemical mass balance 19
- SHABTAI, J. (with MARIA ROSELL and M. TOKARZ), Cross-linked Smectites. III. Synthesis and Properties of Hydroxy-Aluminum Hectorites and Fluorhectorites 99
- SHAYAN, AHMAD, Hisingerite Material from a Basalt Quarry near Geelong, Victoria, Australia 272
- Short course
- micas, Mineralogical Society of America, announcement 160
- Si(acac)₃⁺ (tris(acetylacetonato)silicon(IV))
- adsorption in hectorite, montmorillonite interlayer 93
 - hydrolysis in interlayer of hectorite, montmorillonite to silicic acid 93
 - PILC structures by hydrolysis of, in interlayer of hectorite, montmorillonite 93
- Siderite
- associated with hisingerite, in joints in basalt 272
- Silica
- content of synthetic ferrihydrite 181
 - dissolved, content in presence of montmorillonite/illite 161
 - Si dissolution from nontronite by citrate-bicarbonate, citrate-bicarbonate-dithionite treatment 350
 - Si vs. Al for dioctahedral micas 19
- Silicic acid
- hydrolysis of Si(acac)₃⁺ to, in interlayer of hectorite, montmorillonite 93
 - in PILC structures of hectorite, montmorillonite 93
- SIMONTON, T. C. (with G. W. BRINDLEY), Apparent Long Spacings from Clay-Water Gels, Glasses, and Crystalline Materials Due to Total Reflection of X-rays 235
- Simplified, Complete CsCl-Hydrazine-Dimethylsulfide Intercalation of Kaolinite**, by C. S. Calvert 125
- SINGER, A. (with P. STOFFERS, L. HELLER-KALLAI, and D. SZAFRANEK), Nontronite from a Deep-Sea Core from the South Pacific 375
- SiO₂/Al₂O₃ ratio
- allophane, synthetic, effect on Cu, Co adsorption 300
 - allophane, synthetic, effect on surface charge 291
- Site-mixing
- regular solution, model for chlorites 205
- SLADE, P. G. (with P. A. STONE), Three-Dimensional Order and the Structure of Aniline-Vermiculite 223
- Smectite (see also Bentonite, Montmorillonite)
- adsorption of flavomononucleotide on 279
 - CEC, relation with octahedral Fe content 357
 - /chlorite interstratification, corrensites, b-dimensions, chemical compositions, statistical analysis 391

- Czechoslovakia, CEC, unit-cell composition, surface area 350
- dithionite-reduced, preparation, handling 191
- effect of sodium carbonate, thermal treatment on (02,11) XRD reflection 231
- flavomononucleotide complex, UV-VIS, Mössbauer spectroscopy 279
- /illite interstratification, Sibert, France, XRD, IR, DTA, chemical analysis 154
- /illite, XRD identification procedures 337
- in bentonite, SEM, XRD, IR 259
- New Zealand, CEC, unit-cell composition, surface area 350
- polymerization of 2,6-dimethylphenol on 108
- quantitative mineralogy from XRD and chemical mass balance 19
- saponite in iddingsite rims on olivine, HRTEM 1
- saponite, topotactic relation with olivine 1
- surface charge, dissolution, effect of oxidation, reduction of structural Fe on 350
- swelling, relation with octahedral Fe content 357
- Upton, Wyoming, CEC, unit-cell composition, surface area 350
- Smectite Interactions with Flavomononucleotide**, by M. M. Mortland, J. G. Lawless, H. Hartman, and R. Frankel 279
- Sodium carbonate**
- treatment of soil clays, effect on (02,11) XRD reflection 231
- Soil**
- hematite-containing, color due to degree of Al substitution 157
- Inceptisol, effect of selective dissolution on surface properties, CEC, AEC 283
- talc-containing Ultisol, XRD, CEC, IR, TGA, DTA, free iron content 227
- Ultisol, formation of talc in 227
- Soil clay**
- effect of selective dissolution on surface properties, CEC, ZPC, AEA 283
- effect of thermal treatment on XRD 231
- electrophoresis measurements 283
- Fe-, Al-polycation intercalations, effect on CEC, surface area, flocculation, electrophoresis, water uptake 49
- imogolite-allophane-rich, IR, ESR, surface area, surface charge 291
- imogolite-allophane-rich, phosphate adsorption, SiO₂/Al₂O₃ ratio 291
- sodium carbonate treatment, effect on (02,11) XRD reflection 231
- Solid solution**
- chlorites 205
- goethite, Al in, effect on unit-cell dimensions 36
- montmorillonite/illite vs. mixture of two phases 161
- montmorillonite/illite, stability diagrams 161
- Solubility**
- equilibrium, of illite 115
- Fe, from talc-bearing Ultisol 227
- nontronite, by citrate-bicarbonate, citrate-bicarbonate-dithionite treatment 350
- Solubility Measurements of Phases in Three Illites**, by J. A. Kittrick 115
- Sorption** (see also Adsorption)
- chemisorption of Cu, Co on allophane, imogolite 300
- Source clay, CMS**
- hectorite, SHCa-1, Co-, Ni-, CEC 74
- hectorite, SHCa-1, complexes with phosphines 74
- hectorite, SHCa-1, cross-linked with hydroxy-Al 99
- hectorite, SHCa-1, hydroxy-Al-, adsorption of Cu on 407
- hectorite, SHCa-1, Rh-phosphine complex, IR, XRD 185
- hectorite, SHCa-1, Rh-phosphine complexes on 185
- kaolinite, KGa-1, well crystallized, 10-Å hydrate of 29
- kaolinite, KGa-1, well crystallized, adsorption of molybdate, chlorate on 29
- kaolinite, KGa-1, well crystallized, formation of hydrated phase, structure of water in 419
- kaolinite, KGa-2, poorly crystallized, 10-Å hydrate of 29
- kaolinite, KGa-2, poorly crystallized, for CsCl-hydrazine-DMSO intercalation 125
- saponite, Ballarat, California, origin 247
- saponite, Ballarat, California, XRD, DTA, TGA, IR, chemical composition, CEC, engineering properties 147
- SRIDHARAN, A. (with S. M. RAO), Mechanism of Sulfate Adsorption by Kaolinite 414
- ŠRODOŇ, JAN, X-ray Powder Diffraction Identification of Illitic Material 337
- Static and Dynamic Structure of Water in Hydrated Kaolinites. I. The Static Structure**, by P. M. Costanzo, R. F. Giese, Jr., and M. Lipsicas 419
- Statistics**
- analysis, corrensite chemical compositions 391
- analysis, equilibrium solute activities, mica dissolution 480
- Stern potential**
- illite 400
- kaolinite 400
- montmorillonite 400
- palygorskite 400
- STOESSELL, R. K., Regular Solution Site-Mixing Model for Chlorites 205
- STOFFERS, P. (with A. SINGER, L. HELLER-KALLAI, and D. SZAFRANEK), Nontronite from a Deep-Sea Core from the South Pacific 375

- STONE, P. A. (with P. G. SLADE), Three-Dimensional Order and the Structure of Aniline-Vermiculite 223
- STUCKI, J. W. (with D. C. GOLDEN and C. B. ROTH), Effects of Reduction and Reoxidation of Structural Iron on the Surface Charge and Dissolution of Dioctahedral Smectites 350
- STUCKI, J. W. (with D. C. GOLDEN and C. B. ROTH), Preparation and Handling of Dithionite-Reduced Smectite Suspensions 191
- STUCKI, J. W. (with P. F. LOW, C. B. ROTH, and D. C. GOLDEN), Effect of Oxidation State of Octahedral Iron on Clay Swelling 357
- Sulfate**
 adsorption on kaolinite, ligand exchange 414
 adsorption on kaolinite, mechanism, mono-, bidentate complex formation 414
- Surface acidity**
 kaolinite, effect of, on hydrolysis of agricultural organic chemicals 67
 montmorillonite, effect of, on hydrolysis of agricultural organic chemicals 67
- Surface area**
 ferrihydrite, synthetic 181
 gibbsite, synthetic 12
 hisingerite, from joints in basalt 272
 hydroxy-Al-hectorite, -fluorhectorite 99
 kaolin, Fisher, Cornwall 58
 kaolinite, effect of intercalation of Fe-, Al-poly-cation on 49
 lepidocrocite, synthetic 181
 montmorillonite, Czechoslovakia 350
 montmorillonite, effect of intercalation of Fe-, Al-poly-cation on 49
 montmorillonite, New Zealand 350
 montmorillonite, nontronite, effect of Fe(II) on 350
 montmorillonite, Upton, Wyoming 350
 nontronite, deep-sea core 375
 nontronite, Garfield, Washington 350
 soil clay, effect of intercalation of Fe-, Al-poly-cation on 49
 soil clays 49, 283
- Surface charge**
 allophane, effect of SiO₂/Al₂O₃ ratio 291
 from co-ion exclusion measurements of montmorillonite, illite 131
 imogolite, effect of SiO₂/Al₂O₃ ratio 291
 kaolinite, Gujarat, India 414
 montmorillonite 131, 350
 montmorillonite, effect of oxidation, reduction of structural Fe 350
 nontronite, effect of oxidation, reduction of structural Fe 350
 soil clay 283, 291
 soil clay, effect of SiO₂/Al₂O₃ ratio 291
 soil clays, effect of selective dissolution 283
- Surface Potentials Derived from Co-ion Exclusion Measurements on Homoionic Montmorillonite and Illite**, by D. Y. C. Chan, R. M. Pashley, and J. P. Quirk 131
- Swelling (see Expansion)
- Symbols**
 MDO mica polytypes, derivation 453
- Symmetry**
 MDO mica polytypes, classification, abundance 464
 MDO mica polytypes, symbols 453, 464
- Synthesis**
 Al-hematites 157
 cross-linked smectite, with hydroxy-Al cations 99
 gismondine, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 gobbinsite, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 goethite, Al-rich, methods 36
 hematite, Al- 475
 kaolinite, 10-Å hydrate, by methanol washing of DMSO-kaolinite intercalate 29
 kaolinite, 10-Å hydrate, by NH₄F treatment of DMSO-kaolinite intercalate 29
 kaolinite, hydrated, using DMSO, NH₄F 419
 lepidocrocite, by oxidation of FeCl₂ solution 167, 175
 magnetite, by oxidation of FeCl₂ solution 167, 175
 merlinoite, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 phillipsite, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 PILC of silicic acid and hectorite, montmorillonite, by hydration of Si(acac)₃⁺ 93
 polycations of Fe³⁺, Al 49
 zeolite P₆, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 zeolite W, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 zeolite ZK-19, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
 zeolites, in system Na₂O-K₂O-Al₂O₃-SiO₂-H₂O 433
- Synthesis and Characterization of Zeolites in the System Na₂O-K₂O-Al₂O₃-SiO₂-H₂O**, by R. J. Donahoe, J. G. Liou, and Sandra Guldman 433
- Synthesis of 10-Å Hydrated Kaolinite**, by P. M. Costanzo, R. F. Giese, Jr., and C. V. Clemency 29
- SZAFRANEK, D. (with A. SINGER, P. STOFFERS, and L. HELLER-KALLAI), Nontronite from a Deep-Sea Core from the South Pacific 375
- T
- Talc**
 in Ultisol developed on sapolite, formation 227
 in Ultisol, IR, XRD, TGA, DTA, CEC, free Fe content 227

- TANJI, TAKAYOSHI (with KEIJI YADA and YUICHIRO AKATSUKA), Alternation of Clino- and Orthochrysotile in a Single Fiber as Revealed by High-resolution Electron Microscopy 429
- TAYLOR, R. M., Influence of Chloride on the Formation of Iron Oxides from Fe(II) Chloride. I. Effect of [Cl]/[Fe] on the Formation of Magnetite 167
- TAYLOR, R. M., Influence of Chloride on the Formation of Iron Oxides from Fe(II) Chloride. II. Effect of [Cl] on the Formation of Lepidocrocite and its Crystallinity 175
- Tetrahedral cations
ordering in micas, review 81
- TGA (see Thermal gravimetric analysis)
- THENG, B. K. G. (with G. J. CHURCHMAN, J. S. WHITTON, and G. G. C. CLARIDGE), Comparison of Intercalation Methods for Differentiating Halloysite from Kaolinite 249
- THENG, B. K. G. (with G. J. CHURCHMAN, J. S. WHITTON, and G. G. C. CLARIDGE), Intercalation Method Using Formamide for Differentiating Halloysite from Kaolinite 241
- Thermal expansion
/contraction, clinoptilolite, function of exchangeable cation content 444
/contraction, possible, of clinoptilolite in a nuclear waste repository 444
- Thermal gravimetric analysis (TGA)
hisingerite from joints in basalt 272
kaolinite, hydrated 419
pallid zone clay 363
saponite, Ballarat, California 147
smectite/illite interstratification, Sibert, France 154
talc-bearing Ultisol 227
- Thermal stability
cross-linked hydroxy-Al-hectorite, -fluorhectorite 99
- Thermal treatment (see also Thermal stability)
clinoptilolite, effect on unit-cell parameters 444
effect of, on (02,11) XRD of soil clays 231
ferrihydrite, formed by oxidation of FeCl₂ solution 181
hisingerite, DTA, TGA 272
kaolin, effect on amine-induced luminescence 58
saponite, Ballarat, California, DTA, TGA 147
talc-bearing Ultisol 227
- Thermodynamic Study of Na-K-Ca Exchange Reactions in Vermiculite**, by Atsuyuki Inoue 311
- Thermodynamics
free energy, entropy, enthalpy of exchange for Na-, Ca-, K-vermiculite 311
- THOMPSON, J. G., Two Possible Interpretations of ²⁹Si Nuclear Magnetic Resonance Spectra of Kaolin-Group Minerals 233
- Three-Dimensional Order and the Structure of Aniline-Vermiculite**, by P. G. Slade and P. A. Stone 223
- TOKARZ, M. (with J. SHABTAI and MARIA ROSELL), Cross-linked Smectites. III. Synthesis and Properties of Hydroxy-Aluminum Hectorites and Fluorhectorites 99
- Tonstein
associated with bentonite, lignite, origin, XRD, SEM, petrography, chemical analysis 259
clinoptilolite in, SEM, XRD, origin 259
gradation to bentonite 259
vermicular kaolinite in, SEM, XRD 259
- Topotactic transformation
saponite, goethite from olivine in iddingsite rims 1
- TORRANCE, J. K. (with MARIA PIRNAT), Effect of pH on the Rheology of Marine Clay from the Site of the South Nation River, Canada, Landslide of 1971 384
- TORRENT, J. (with V. BARRON, J. L. RENDON, and C. J. SERNA), Relation of Infrared, Crystallochemical, and Morphological Properties of Al-Substituted Hematites 475
- TORRENT, J. (with V. BARRON), Influence of Aluminum Substitution on the Color of Synthetic Hematite 157
- Transition elements
influence on formation of iron oxides 334
retention, loss during weathering of ilmenite 363
- Transmission electron microscopy (TEM)
anatase, in pallid zone clays 363
cross-linked Li-fluor-Al-hectorite 99
gibbsite, in pallid zone clays 363
gibbsite, synthetic 12
goethite in iddingsite rims on olivine 1
halloysite, in pallid zone clays 363
halloysite, smectite in tonstein-bentonite transition zone 259
hematite, Al-, synthetic 475
high-resolution, clino-, orthochrysotile in single fiber 429
hisingerite, from joints in basalt 272
iddingsite, rims on olivine 1
ilmenite, altered, in pallid zone clays 363
kaolinite, in pallid zone clays 363
lepidocrocite, from oxidation of FeCl₂ solution 167, 171
magnetite, from oxidation of FeCl₂ solution 167
nontronite, deep-sea core 375
olivine, iddingsite rims 1
saponite in iddingsite rims on olivine 1
- Tris(acetylacetonato)silicon(IV) Binding to Montmorillonite and Hydrolysis to Interlayer Silicic Acid**, by C. G. Manos, Jr., M. M. Mortland, and T. J. Pinnavaia 93

Tuff (see Volcanic ash)

Two Possible Interpretations of ^{29}Si Nuclear Magnetic Resonance Spectra of Kaolin-Group Minerals, by J. G. Thompson 233

U

Ultisol (see Soil)

Ultraviolet-visible spectroscopy (UV-VIS)

amine compounds 58

identification of polymerized phenols on smectites 108

$\text{Si}(\text{acac})_3^+$ -adsorbed hectorite, montmorillonite 93

smectite-flavomononucleotide complex 279

Unit cell

b-dimension, corrensites, relation to composition 391

dimensions, goethite, effect of Al content on 36

formula, montmorillonite, Upton, Wyoming 350

formula, nontronite, Garfield, Washington 350

parameters, clinoptilolite, as function of exchangeable cation content, thermal treatment 444

parameters, dickite 483

parameters, hematite, synthetic Al- 475

Use of the (02,11) X-ray Diffraction Reflections to Identify Clays, by A. K. Helmy, N. Peinemann, and C. Y. Andreoli 231

UV-VIS (see Ultraviolet-visible spectroscopy)

V

VAN HOVE, MATHIEU (with R. A. SCHOONHEYDT, RUDI VAN OVERLOOP, and JOHAN VERLINDEN), Complexes of Trimethylphosphine and Dimethylphenylphosphine with Co(II) and Ni(II) on Hectorite and on Zeolites X and Y 74

VAN OVERLOOP, RUDI (with R. A. SCHOONHEYDT, MATHIEU VAN HOVE, and JOHAN VERLINDEN), Complexes of Trimethylphosphine and Dimethylphenylphosphine with Co(II) and Ni(II) on Hectorite and on Zeolites X and Y 74

VERLINDEN, JOHAN (with R. A. SCHOONHEYDT, RUDI VAN OVERLOOP, and MATHIEU VAN HOVE), Complexes of Trimethylphosphine and Dimethylphenylphosphine with Co(II) and Ni(II) on Hectorite and on Zeolites X and Y 74

Vermiculite

-aniline intercalate, crystal structure, three-dimensional ordering 223

/chlorite interstratifications, corrensites, b-dimensions, chemical compositions, statistical analysis 391

Na-, K-, Ca-forms, exchange isotherms, CEC 311

Na-, K-, Ca-forms, free energy, enthalpy, entropy of exchange 311

quantitative mineralogy from XRD and chemical mass balance 19

Viscosity

saponite, Ballarat, California 147

Volcanic ash,

origin of tonstein, bentonite 259

W

Water

aqueous montmorillonite emulsions, X-ray diffraction 320

dehydration of clinoptilolite, effect on unit-cell parameters 444

dehydration of hydrated kaolinite, kinetics of 419

effect of moisture content on hydrolysis kinetics of agricultural organic chemicals on montmorillonite, kaolinite 67

in hydrated kaolinite, static structure 419

interlayer, in kaolinite, two types 419

uptake of kaolinite, inhibited by polycations of Al, Fe 49

uptake of montmorillonite, inhibited by polycations of Al, Fe 49

uptake of soil clay, inhibited by polycations of Al, Fe 49

Weathering

formation of tonstein, bentonite by 259

formation of vermicular kaolinite in tonstein by 259

ilmenite, in lateritic pallid zone 363

olivine to goethite and saponite, topotactic relations 1

olivine to iddingsite rims, studied by TEM, HRTEM 1

talc in Ultisol developed on saprolite 227

Weathering of Ilmenite in a Lateritic Pallid Zone, by R. R. Anand and R. J. Gilkes 353

WEISS, Z. (with S. ĐUROVIČ and K.-O. BACKHAUS), Polytypism of Micas. II. Classification and Abundance of MDO Polytypes 464

WHITTON, J. S. (with G. J. CHURCHMAN, G. G. C. CLARIDGE, and B. K. G. THENG), Intercalation Method Using Formamide for Differentiating Halloysite from Kaolinite 241

WHITTON, J. S. (with B. K. G. THENG, G. J. CHURCHMAN, and G. G. C. CLARIDGE), Comparison of Intercalation Methods for Differentiating Halloysite from Kaolinite 249

X

X-ray Diffraction Study of Aqueous Montmorillonite Emulsions, by Yoshiaki Fukushima 320

X-ray fluorescence analysis (XRF)

nontronite, deep-sea core 375

X-ray powder diffraction (XRD)

bentonite, associated with lignite, tonstein 259

clinoptilolite in lignite, Texas 259

- clinoptilolite, effect of exchangeable cation content, dehydration, on unit-cell parameters 444
- ferrihydrite, formed by oxidation of FeCl_2 solutions 167
- formamide-treated halloysite 241, 249
- formamide-treated kaolinite 241, 249
- gibbsite, Alabama Street Mine, Arkansas 139
- gismondine, synthetic 433
- gobbsite, synthetic 433
- goethite, Al-, effect of Al content on unit-cell dimensions 36
- goethite, formed by reaction of calcite and $\text{Fe}(\text{ClO}_4)_2$ 213
- hectorite, $\text{Rh}(\text{NBD})(\text{PPh}_3)_2^+$ -adsorbed 185
- hematite, Al-, synthetic, unit-cell parameters 475
- hematite, synthetic, Al content from d-spacings 157
- hisingerite, from joints in basalt 272
- hydroxy-Al-hectorite, -fluorhectorite, basal spacings 99
- identification procedures for illitic materials 337
- illite/smectite, Sibert, France 154
- ilmenite, partially, completely altered 363
- kaolinite in tonstein, Texas 259
- kaolinite, 10-Å hydrate 29
- kaolinite, Alabama Street Mine, Arkansas 139
- kaolinite, CsCl-hydrazine-DMSO intercalate of 125
- kimberlite, alteration products 19
- lepidocrocite, formed by oxidation of FeCl_2 solution, peak heights, peak areas 167, 175
- lepidocrocite, formed by reaction of calcite and $\text{Fe}(\text{ClO}_4)_2$ 213
- lignite, associated with bentonite, tonstein 259
- long spacings from gels, glass, clay minerals, due to total X-ray reflection 235
- low-angle scattering, aqueous montmorillonite emulsions 320
- magnetite, after heating 167
- magnetite, formed by oxidation of FeCl_2 solution, peak heights, peak areas 167
- merlinoite, synthetic, natural 433
- montmorillonite emulsions, aqueous 320
- nontronite, deep-sea core 375
- pallid zone clay 363
- phillipsite, synthetic, natural 433
- preferentially oriented clay, suction device for mounting 125
- quantitative mineralogical analysis from, and chemical mass balance 19
- saponite, Ballarat, California 147
- talc-bearing Ultisol 227
- technique for Al estimation of goethite 36
- tonstein, associated with bentonite, lignite 259
- use of (02,11) reflection in soil clay identification 231
- zeolite P₁, synthetic 433
- zeolite W, synthetic 433
- zeolite ZK-19, synthetic 433
- X-ray Powder Diffraction Identification of Illitic Material**, by Jan Środoń 337
- XRD (see X-ray powder diffraction)
- XRF (see X-ray fluorescence analysis)
- Y
- YADA, KEIJI (with TAKAYOSHI TANJI and YUICHIRO AKATSUKA), Alternation of Clino- and Orthochrysotile in a Single Fiber as Revealed by High-resolution Electron Microscopy 429
- Yield stress
- marine clay, effect of pH on 384
- point, saponite, Ballarat, California 147
- Z
- ZELAZNY, L. W. (with W. G. HARRIS and J. C. BAKER), Depth and Particle Size Distribution of Talc in a Virginia Piedmont Ultisol 227
- Zeolite (see also individual minerals)
- clinoptilolite formation in lignite, tonstein, bentonite 259
- clinoptilolite in lignite, XRD 259
- clinoptilolite in tonstein, SEM 259
- clinoptilolite, effect of exchangeable cation content, dehydration, on unit-cell parameters 444
- clinoptilolite, possible effect of thermal treatment on expansion, contraction, in nuclear waste repository 444
- gismondine, synthesis, characterization 433
- gobbsite, synthesis, characterization 433
- meeting announcement, ZEOLITE '85: An International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites 520
- merlinoite, occurrence, diagenesis in saline, alkaline lake deposits 433
- merlinoite, synthesis, characterization, diagenesis in saline, alkaline lake deposits 433
- P₁, synthesis, characterization 433
- phillipsite, synthesis, characterization 433
- synthesis, characterization in system $\text{Na}_2\text{O}-\text{K}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ 433
- W, synthesis, characterization 433
- Y, Co-, Ni-exchanged, adsorption of phosphines on 74
- Y, Co-, Ni-exchanged, phosphine-adsorption complexed, reflectance spectroscopy 74
- Y, Ni-exchanged, ligand field parameters with phosphine complexes 74
- ZK-19, synthesis, characterization 433
- Zeolite P₁, synthesis, XRD, SEM, Na, K content 433

- Zeolite W
synthesis, XRD, SEM, Na, K content 433
- Zeolite Y
Co-, Ni-exchanged, adsorption of phosphines on 74
Co-, Ni-exchanged, phosphine-adsorption complexed, reflectance spectroscopy 74
- Zeolite ZK-19
synthesis, XRD, SEM, Na, K content 433
- Zero point of charge (ZPC)
soil clays, effect of selective dissolution on 283
- Zeta potential (see Zero point of charge)
- Zinnwaldite
cation ordering in, review 81
- ZPC (see Zero point of charge)
- ZVYAGIN, B. B. (with J. M. D. COEY and F. V. CHUKHROV), Cation Distribution, Mössbauer Spectra, and Magnetic Properties of Ferripyrophyllites 198