

## INDEX

Full titles of papers are in **boldface** type

- Allogenic clay minerals, 227  
Allophane  
glycerol retention, 326  
surface area, 334  
Alteration, postdepositional, 160  
**Altered siliceous volcanics as a source of refractory clay**, by L. B. Sand and L. L. Ames, Jr., 39  
AMES, L. L., JR. (With L. B. SAND) : Altered siliceous volcanics as a source of refractory clay, 39  
Analcime, 39  
Morrison formation, 121  
**Analysis of consistencies of kaolin-water systems below the plastic range**, by Robert B. Langston and Joseph A. Pask, 4  
Aniline-furfural, 189  
Arkansas soils, 197  
Attapulgite, 136  
chemical composition, 137  
occurrence, 138  
Authigenic clay minerals, 227  
Base exchange, nontronite, 181, 182  
BEAVERS, A. H. (With W. A. WHITE, H. L. WASCHER, G. M. WILSON, and J. B. DROSTE) : Itinerary of field trip for Fifth National Clay Conference, 1  
Bentonite  
drilling fluids, 46  
gel structure, 61  
Hector, Calif., 43  
organophilic, 308  
particle interaction, 77  
sodium, surface conductance, 61  
Wyoming, 46, 61  
x-ray diffraction data, 313, 315  
Bentonite-water systems, 51  
Black shales, clay minerals in, 164  
BRADLEY, W. F. (With R. A. ROWLAND, E. J. WEISS, and C. E. WEAVER) : Temperature stabilities of montmorillonite- and vermiculite-glycol complexes, 348  
BRINDLEY, G. W. (With M. NAKA-HIRA) : A kinetic study of the dehydroxylation of kaolinite, 266  
BROWN, B. E. (With M. L. JACKSON) : Clay mineral distribution in the Hiawatha sandy soils of northern Wisconsin, 213  
Cation adsorption, 159  
Cation exchange capacity, Hiawatha soil, 216  
Chemical composition  
attapulgite, 137  
glauconitic mica, 120, 124  
Hiawatha soils, 216  
Holdenville shale, 245  
illite, 86, 96  
kaolinite, 86, 95  
marine clays, 88  
montmorillonite, 86, 100, 102  
Recent sediments, 262  
sepiolite, 137  
Chlorite  
diagenesis to, 81  
electron micrographs, 107, 108, 109, 110  
**Clay mineral distribution in the Hiawatha sandy soils of northern Wisconsin**, by B. E. Brown and M. L. Jackson, 213  
**Clay mineral distribution in the soil areas of Arkansas**, by C. L. Garey, 197  
**Clay mineralogy of Pennsylvanian sediments in southern Illinois**, by Herbert D. Glass, 227  
**Clay mineralogy of Recent sediments from the Mississippi Sound area**, by I. H. Milne and W. L. Shott, 253  
Clay minerals (*See also* specific minerals)  
authigenic, 227  
black shales, 164  
detrital, 159  
origin, 159  
and permeability, 227  
**Clay minerals at a Pennsylvanian disconformity**, by Jane A. Dalton, Ada Swineford, and J. M. Jewett, 242  
Clay-organic complex, 253  
Consistencies of kaolin-water systems, 4  
Crystal structure, nontronite, 175  
DALTON, JANE A. (With ADA SWINEFORD and J. M. JEWETT) : Clay minerals at a Pennsylvanian disconformity, 242  
DAVIDSON, D. T. (With J. B. SHEELER and R. L. HANDY) : Effects of a synthetic resin on differential thermal analysis of loess, 189  
Dehydroxylation of kaolinite, 266  
**Density and structure of endellite**, by Fred L. Pundsack, 129  
Detrital clay minerals, 159  
Diagenesis, 84, 159  
illite, 81  
kaolinite, 81

- montmorillonite, 81
- Diagenetic modification of clay mineral types in artificial sea water**, by U. Grant Whitehouse and Ronald S. McCarter, 81
- DIAMOND, SIDNEY (With EARL B. KINTER) : Gravimetric determination of monolayer glycerol complexes of clay minerals, 318
- DIAMOND, SIDNEY (With EARL B. KINTER) : Surface areas of clay minerals as derived from measurements of glycerol retention, 334
- Differential thermal analysis, loess, 189
- Discussion on the origin of clay minerals in sedimentary rocks**, by Charles E. Weaver, 159
- Double-layer conductance, 63
- Drilling fluids, 46
- DROSTE, J. B. (With W. A. WHITE, A. H. BEAVERS, H. L. WASCHER, and G. M. WILSON) : Itinerary of field trip for Fifth National Clay Conference, 1
- Drummer clay loam, 2
- Effects of a synthetic resin on differential analysis of loess**, by J. B. Sheeler, R. L. Handy, and D. T. Davidson, 189
- Electron diffraction, 93, 104, 109
- Electron micrographs
- chlorite, 109, 110
  - chloritic "threads," 107, 108
  - halloysite, Fox, 41
  - illite, 89, 111
  - kaolinite, 43, 87
  - montmorillonite, flocculated, 114
  - montmorillonite, Mg-enriched, 105, 107
  - montmorillonite, Upton, Wyo., 88
- Elliot silt loam, 3
- Endellite (*See also* halloysite)
- density, 129
  - glycerol complexes, 318
  - structure, 129
  - surface area, 334
  - x-ray diffraction data, 131
- Environment of deposition, 159, 227
- Exchangeable cations, montmorillonite, 279
- Expansion, interlamellar, in muscovite, 289
- Experimental structure factor curves of montmorillonites**, by Edward C. Jonas, 295
- Field trip, Fifth National Clay Conference, 1
- Filtration theory for oil-well drilling fluids**, by D. T. Oakes, 46
- Fithian illite, 1, 89
- Flanagan silt loam, 1
- Flocculation, 4
- montmorillonite in sea water, 81
- Flow, 4
- Formation resistivity factor, 61
- Fourier analyses
- montmorillonite, 348
  - organophilic bentonites, 308
  - vermiculite, 348
- GAREY, C. L. : Clay mineral distribution in the soil areas of Arkansas, 197
- Gel structure, bentonite, 61
- Genesis, illite-montmorillonite, 168
- GLASS, HERBERT D. : Clay mineralogy of Pennsylvanian sediments in southern Illinois, 227
- Glauconitic mica in the Morrison formation in Colorado**, by W. D. Keller, 120
- Glycerol complexes, 318
- decomposition temperature, 332
- Glycerol retention and surface areas, 334
- Glycol-montmorillonite complexes, 348
- Glycol-vermiculite complexes, 348
- Gravimetric determination of monolayer glycerol complexes of clay minerals**, by Earl B. Kinter and Sidney Diamond, 318
- Halloysite, 39 (*See also* endellite)
- electron micrograph, 41
  - surface area, 334
- HANDY, R. L. (With J. B. SHEELER and D. T. DAVIDSON) : Effects of a synthetic resin on differential thermal analysis of loess, 189
- Hectorite, 42
- Heterogeneity in montmorillonite**, by James L. McAtee, Jr., 279
- Heulandite, 39
- Hiawatha soil, 213
- High temperature phases in montmorillonites**, by Georges Kulbicki, 144
- Hydrothermal action, 44
- Hydrous mica, Morrison formation, 121
- Illite
- chemical composition, 86, 96
  - diogenesis, 81
  - distribution, 166
  - electron micrographs, 89, 111
  - Fithian, 1, 89
  - surface area, 334
- Illite-montmorillonite, genesis, 168
- Inheritance, 227
- Interlamellar expansion in muscovite, 289
- Interstratification, random, in organophilic bentonites, 308
- Itinerary of field trip for Fifth National Clay Conference**, by W. A. White, A. H. Beavers, H. L. Wascher, G. M. Wilson, and J. B. Droste, 1
- JACKSON, M. L. (With B. E. Brown) : Clay mineral distribution in the Hiawatha sandy soils of northern Wisconsin, 213

- JEWETT, J. M. (With JANE A. DALTON and ADA SWINEFORD) : Clay minerals at a Pennsylvanian disconformity, 242
- JONAS, EDWARD C. : Experimental structure factor curves of montmorillonites, 295
- Kaolin-water systems, 4
- Kaolinite, 39
- chemical composition, 86, 95
  - diagenesis, 81
  - dehydroxylation, 266
  - distribution, 165
  - electron micrographs, 43, 87
  - lithium, 23
  - origin, 231
  - plastic viscosity, 13, 16
  - rheological properties, 4
  - slurry aging, 32
  - surface area, 334
  - yield point, 14, 17
- KELLER, W. D. : Glauconitic mica in the Morrison formation in Colorado, 120
- Kinetic study of the dehydroxylation of kaolinite**, by G. W. Brindley and M. Nakahira, 266
- KINTER, EARL B. (With SIDNEY DIAMOND) : Gravimetric determination of monolayer glycerol complexes of clay minerals, 318
- KINTER, EARL B. (With SIDNEY DIAMOND) : Surface areas of clay minerals as derived from measurements of glycerol retention, 334
- KORNFIELD, JOSEPH A. : Statistical relationships of minor constituents of some nontronites, 174
- KULBICKI, GEORGES : High temperature phases in montmorillonites, 144
- LANGSTON, ROBERT B. (With JOSEPH A. PASK) : Analysis of consistencies of kaolin-water systems below the plastic range, 4
- Layer charge and interlamellar expansion in a muscovite**, by Joe L. White, 289
- Lithium kaolinite, water vapor sorption on, 23
- Loess, 1, 201
- differential thermal analysis, 189
- McATEE, JAMES L., JR. : Heterogeneity in montmorillonite, 279
- McATEE, JAMES L., JR. : Random interstratification in organophilic bentonites, 308
- McCARTER, RONALD S. (With U. GRANT WHITEHOUSE) : Diagenetic modification of clay mineral types in artificial sea water, 81
- Magcobar Xact clay, 53
- Marine clays, chemical composition, 88
- MARTIN, R. TORRENCE : Water vapor sorption on lithium kaolinite, 23
- MILNE, I. H. (With W. L. SHOTT) : Clay mineralogy of Recent sediments from the Mississippi Sound area, 253
- Mineral composition
- Hiawatha soil, 219, 224, 225
  - Holdenville shale, 248
  - Pennsylvanian sediments, 229, 231
  - Recent sediments, 263
  - sedimentary rocks, 159
- Mississippi Sound, Recent sediments, 253
- Montmorillonite, 2, 39
- chemical composition, 86, 100, 102
  - diagenesis, 81
  - distribution, 166
  - electron micrographs, 88, 105, 107, 114
  - exchangeable cations, 279
  - flocculation, 81
  - Fourier analyses, 348
  - glycerol complexes, 318
  - glycol complexes, 348
  - heterogeneity in, 279
  - Hiawatha soil, 213
  - high temperature phases, 144
  - Morrison formation, 121
  - structural formulas, 147
  - structure factor curves, 295
  - surface area, 334
  - synthetic, 139
  - x-ray diffraction data, 279, 320, 349, 350
- Montmorillonite-beidellite, 39
- MUMPTON, FRED A. (With RUSTUM ROY) : New data on sepiolite and attapulgite, 136
- Muscovite, layer charge and interlamellar expansion, 289
- Muscovite weathering in a soil developed in the Virginia Piedmont**, by C. I. Rich, 203
- NAKAHIRA, M. (With G. W. BRINDLEY) : A kinetic study of the dehydroxylation of kaolinite, 266
- New data on sepiolite and attapulgite**, by Fred A. Mumpton and Rustum Roy, 136
- Nontronite
- base exchange, 181, 182
  - crystal structure, 175
  - minor constituents, 174
- OAKES, D. T. : Filtration theory for oil-well drilling fluids, 46
- Occurrence
- attapulgite, 138
  - glauconitic mica, 121
  - sepiolite, 138, 141
- Oil-well drilling fluids, filtration theory for, 46
- Organophilic bentonites, 308

- Origin (*See also* genesis)  
 clay minerals in sedimentary rocks, 159  
 glauconitic mica, 124  
 kaolinite, 231
- Particle interaction, bentonite, 77  
 Particle orientation, 4  
 Particle shape, 4  
 Particle size, Hiawatha soil, 215  
**PASK, JOSEPH A.** (With ROBERT B. LANGSTON) : Analysis of consistencies of kaolin-water systems below the plastic range, 4  
 Pennsylvanian, clay minerals, 227, 242  
 Permeability, and clay minerals, 227  
 Plastic viscosity, kaolinite, 13, 16  
 Postdepositional alteration, 160  
**PUNDACK, FRED L.**: Density and structure of endellite, 129
- Random interstratification of organophilic bentonites**, by James L. McAtee, Jr., 308  
 Recent sediments, Mississippi Sound, 253  
 Refractory clay from siliceous volcanics, 39  
 Resin, synthetic, effect on D.T.A. of loess, 189  
 Rheological properties, kaolinite, 4  
**RICH, C. I.**: Muscovite weathering in a soil developed in the Virginia Piedmont, 203  
**ROWLAND, R. A.** (With W. F. BRADLEY, E. J. WEISS, and C. E. WEAVER) : Temperature stabilities of montmorillonite- and vermiculite-glycol complexes, 348  
**ROY, RUSTUM** (With FRED A. MUMPTON) : New data on sepiolite and attapulgite, 136
- SAND, L. B.** (With L. L. AMES, JR.) : Altered siliceous volcanics as a source of refractory clay, 39  
 Saponite, 39  
 synthetic, 139  
 Sea water, artificial, diagenesis in, 81  
 Sepiolite, 136  
 Balmat, N.Y., 141  
 chemical composition, 137  
 occurrence, 138, 141
- SHEELER, J. B.** (With R. L. HANDY and D. T. DAVIDSON) : Effects of a synthetic resin on differential thermal analysis of loess, 189
- SHOTT, W. L.** (With I. H. MILNE) : Clay mineralogy of Recent sediments from the Mississippi Sound area, 253
- Silica, Morrison formation, 121  
 Siliceous volcanics, altered, 39  
 Slurry aging, lithium kaolinite, 32  
 Soil  
 Arkansas, 197
- fossil, 242  
 Hiawatha, 213  
 loess, 190  
 Virginia Piedmont, 203  
 profiles, 1  
 stabilization, 189
- Statistical relationships of minor constituents of some nontronites**, by Joseph A. Kornfeld, 174
- Structural formulas, montmorillonite, 147  
 Structure, endellite, 129  
 Structure factor curves, montmorillonites, 295
- Surface areas of clay minerals as derived from measurements of glycerol retention**, by Sidney Diamond and Earl B. Kinter, 334
- Surface conductance of sodium bentonite in water**, by H. van Olphen and M. H. Waxman, 61
- SWINEFORD, ADA** (With JANE A. DALTON and J. M. JEWETT) : Clay minerals at a Pennsylvanian disconformity, 242
- Synthesis  
 attapulgite, 136  
 sepiolite, 136
- Temperature stabilities of montmorillonite- and vermiculite-glycol complexes**, by W. F. Bradley, R. A. Rowland, E. J. Weiss, and C. E. Weaver, 348
- Thixotropic flow, 4
- Underclay, 2
- Vacuo aging, lithium kaolinite, 35  
**VAN OLPHEN, H.** (With M. H. WAXMAN) : Surface conductance of sodium bentonite in water, 61
- Vermiculite, 203  
 Fourier analyses, 348  
 glycerol complexes, 318  
 glycol complexes, 348  
 surface area, 334  
 x-ray diffraction data, 349, 350, 353
- Vermiculite-biotite, 41  
 Virginia Piedmont soil, 203  
 Viscosity, Einstein's equation, 4  
 Volcanics, siliceous, altered, 39
- WASCHER, H. L.** (With W. A. WHITE, A. H. BEAVERS, G. M. WILSON, and J. B. DROSTE) : Itinerary of field trip for Fifth National Clay Conference, 1
- Water vapor sorption on lithium kaolinite**, by R. Torrence Martin, 23
- WAXMAN, M. H.** (With H. VAN OLPHEN) : Surface conductance of sodium bentonite in water, 61
- Weathering, 227  
 muscovite, 203

- WEAVER, CHARLES E.: A discussion on the origin of clay minerals in sedimentary rocks, 159
- WEAVER, CHARLES E. (With W. F. BRADLEY, R. A. ROWLAND, and E. J. WEISS): Temperature stabilities of montmorillonite- and vermiculite-glycol complexes, 348
- WEISS, E. J. (With W. F. BRADLEY, R. A. ROWLAND, and C. E. WEAVER): Temperature stabilities of montmorillonite- and vermiculite-glycol complexes, 348
- WHITE, JOE L.: Layer charge and inter-lamellar expansion in a muscovite, 289
- WHITE, W. A. (With A. H. BEAVERS, H. L. WASCHER, G. M. WILSON, and J. B. DROSTE): Itinerary of field trip for Fifth National Clay Conference, 1
- WHITEHOUSE, U. GRANT (With RONALD S. McCARTER): Diagenetic modification of clay mineral types in artificial sea water, 81
- Wiesenbodens, 2
- WILSON, G. M. (With W. A. WHITE, A. H. BEAVERS, H. L. WASCHER, and J. B. DROSTE): Itinerary of field trip for Fifth National Clay Conference, 1
- Wyoming bentonite, 46, 61
- X-ray diffraction data
- Arkansas soil, 197
  - bentonite, organophilic, 313, 315
  - black shales, 164
  - endellite, 131
  - glaucous mica, 120, 122, 123
  - Hepler sandstone, 246
  - Hiawatha soil, 217, 218, 220, 222
  - Holdenville shale, 247, 249, 250, 251
  - lithium muscovite, 292
  - montmorillonite, 279, 320, 349, 350
  - Recent sediments, 256
  - vermiculite, 349, 350, 353
  - Virginia Piedmont soil, 206, 207, 208, 209, 210
- Yield point, kaolinite, 14, 17
- Zeolites, 39