

THE CANADIAN MINERALOGIST

Volume 19, Index

Author Index

- ABBOTT, R.N., Jr., AFM liquidus projections for granitic magmas, with special reference to hornblende, biotite and garnet, 103
- ALLAN, B.D. & Clarke, D.B. Occurrence and origin of garnets in the South Mountain batholith, Nova Scotia, 19
- ANDERSON, J.L. & Rowley, M.C. Synkinematic intrusion of peraluminous and associated metaluminous granitic magmas, Whipple Mountains, California, 83
- ANSELL, H.G. with Roberts, A.C., 393
- AUTEFAGE, F., with Velasco, F., 593
- AYORA, C. and Gali, S. Additional data on robinsonite, 415
- BAILEY, S.W. A system of nomenclature for regular interstratifications, 653
- BARNETT, R.L., with Thomson, M.L., 469
- BEDDOE-STEPHENS, B. Metamorphism of the Rossland volcanic rocks, southern British Columbia, 631
- BERNARDINI, G.P., Mazzetti, G. and Trosti-Ferroni, R. The system Cu-Fe-Se: reconnaissance phase relations between 500 and 700°C, 451
- BERRY, L.G. with Nickel, E.H., 315
- BISTRICKI, T. with Murdock, A., 435
- BIRCHALL, T. with Manning, P.G., 525
- BONARDI, M., Roberts, A.C., Sabina, A.P. and Chao, G.Y. Sodium rich dachiardite from the Francon quarry, Montreal Island, Quebec, 285
- BOWDEN, P. with Martin, R.F., 65
- BOYLE, D.R., Littlejohn, A.L., Roberts, A.C. and Watson, D.M. Niygoite in uranium deposits of south-central British Columbia: first North American occurrence, 325
- BRADFISH, L.J. with Miller, C.F., 25
- BRISSE, F. La symétrie bidimensionnelle et le Canada, 217
- BURKE, E.A.J., Kieft, C. and Zakrzewski, M.A. The second occurrence of ardaite: Gruvåsen, Bergslagen, Sweden, 419
and Lustenhouwer, W.J. Pehrmannite, a new beryllium mineral from the Rosendal pegmatite, Kemio Island, southwestern Finland, 311
- CAWTHORN, R.G. with Tischler, S.E., 607
- ČERNÝ, P., Paul, B.J., Hawthorne, F.C., & Chapman, R. A niobian rutile-disordered columbite intergrowth from the Huron Claim pegmatite, southeastern Manitoba, 541
- ČERNÝ, P. with Goad, B.E., 177
with Longstaffe, F.J., 195
with Paul, B.J., 549
- CHAO, G.Y. with Bonardi, M., 285
with Perrault, G., 411
- CHAPMAN, R. with Černý, P., 541
with Paul, B.J., 549
- CHEN, T.T. with Dutrizac, J.E., 559
with Perrault, G., 411
& Szymański, J.T. The structure and chemistry of galkhalite, a mercury sulfosalt containing Cs and Tl, 571
- CLARKE, D.B. The mineralogy of peraluminous granites: a review, 3
with Allan, B.D., 19
with Muecke, G.K., 133
- CLEMENS, J.D. with Phillips, G.N., 47
and Wall, V.J. Origin and crystallization of some peraluminous (S-type) granite magmas, 111
- COCKAYNE, B. with Lloyd, G.E., 505
- COLEMAN, L.C. and Robertson, B.T. Nahpoite Na₂HPO₄, a new mineral from the Big Fish River area, Yukon Territory, 373
- CURRIE, K.L. & Pajari, G.E., Jr. Anatectic peraluminous granites from the Carmanville area, northeastern Newfoundland, 147
- d'ARCO, P. and Maury, R.C. Comparative geothermometry of some magnetite-ilmenite-orthopyroxene-clinopyroxene associations from volcanic rocks, 461
- DELIENS, M. & Piret, P. La swamboïte, nouveau silicate d'uranium hydraté du Shaba, Zaïre, 553
- DOLLASE, W.A. with Miller, C.F., 25
- DOSTAL, J. with Dupuy, C., 225
- DUCHI, G. with Orlandi, P., 423
- DUNLAP, R.A. with Stroink, G., 519
- DUNN, P.J. Magnesium-chlorophoenicite redefined and new data on chlorophoenicite, 333
with Roberts, A.C., 393
with Sturman, B.D., 377
with Sturman, B.D., 381
- DUPUY, C., Dostal, J. and Leblanc, M. Distribution of copper and gold in ophiolites from New Caledonia, 225
- DUTRIZAC, J.E. & Chen, T.T. The synthesis of mercury jarosite and the mercury concentration in jarosite-family minerals, 559
- ERD, R.C. with Foord, E.E., 303
- FERGUSON, R.B. From unit-cell parameters to Si/Al distribution in K-feldspars: corrigendum, 363
- FLEET, M.E. with Thomson, M.L., 469
- FOORD, E.E., Erd, R.C. and Hunt, G.R. New data for jeremejevite, 303
- FOSCOLOS, A.E. with Kodama, H., 279
- FRANCIS, D.M. with Stamatelopoulos-Seymour, K., 361
- GAIT, R.I. with Lasmanis, R., 409
- GALI, S. with Ayora, C., 415
- GASPARRINI, E. with Grice, J.D., 337
- GOAD, B.E. & Černý, P. Peraluminous pegmatitic granites and their pegmatite aureoles in the Winnipeg River district, southeastern Manitoba, 177
- GOBLE, R.J. The leaching of copper from anilite and the production of a metastable copper sulfide structure, 583
- GOLE, M.J. Ca-Fe-Si skarns containing babingtonite: first known occurrence in Australia, 269
- GRICE, J.D. and Gasparini, E. Spertiniite, Cu(OH)₂, a new mineral from the Jeffrey mine, Quebec, 337
- HALL, M.G., with Lloyd, G.E., 505
- HALLIDAY, A.N., Stephens, W.E. and Harmon, R.S. Isotopic and chemical constraints on the development of peraluminous Caledonian and Acadian granites, 205
- HANMER, S.K. and Strong, D.F., 163
- HARMON, R.S. with Halliday, A.N., 205
- HAWTHORNE, F.C. with Černý, P., 541
- HINTHORNE, J.R., with Paul, B.J., 549
- HOFMANN, H.J. with Pouliot, G., 535
- HUNT, G.R. with Foord, E.E., 303
- HUTT, D. with Stroink, G., 519
- ISAACS, A.M. and Peacor, D.R. Panasqueiraitite, a new mineral: the OH-equivalent of isokitite, 389
- IVARSON, K.C., Ross, G.J. and Miles, N.M. Formation of rubidium jarosite during the microbiological oxidation of ferrous iron at room temperature, 429
- JEN, L.S. and Kretz, R. Mineral chemistry of some mafic granulites from the Adirondack region, 479
- JONES, D.W. with Lloyd, G.E., 505
- JONES, W. with Manning, P.G., 525
- KARUP-MØLLER, S. and Makovicky, E. Ag- and Bi-rich hevrovskyite from the Bi-W-Mo mineralization at Castlegar, British Columbia, 349
- KIEFT, C. with Burke, E.A.J., 419
- KINGSTON, G.A. with Tischler, S.E., 607
- KODAMA, H. and Foscolos, A.E. Occurrence of berthierine in Canadian Arctic desert soils, 279
- KRETZ, R. Site-occupancy interpretation of the distribution of Mg and Fe between orthopyroxene and clinopyroxene in metamorphic rocks, 493
with Jen, L.S., 479
- KÜBLER, L. Note on the hardness of hexagonal pyrrhotite and a method for measuring the abrasion depth in sulfides, 355
- KWAK, T.A.P. Sector-zones annite₅ phlogopite₁₅ micas from the Mt. Lindsay Sn-W-F-(Be) deposit, Tasmania, Australia, 643
- LASMANIS, R., Nagel, J., Sturman, B.D. and Gait, R.I. Mandarinite from the De Lamar silver mine, Owyhee

- County, Idaho, U.S.A. 409
- LeANDERSON, P.J. Calculation of temperature and $X(\text{CO}_2)$ values for tremolite-K-feldspar-diopside-epidote assemblages, 619
- LEBLANC, M. with Dupuy, C., 225
- LINDSLEY, D.H. with Turnock, A.C., 255
- LITTLEJOHN, A.L. with Boyle, D.R. 325
- LLOYD, G.E., Hall, M.G., Cockayne, B. and Jones, D.W. Selected area electron channeling patterns from geological materials: specimen preparation, indexing and representation of patterns, and applications, 505
- LOMBARDI, G. and Sposato, A. Tamarugite from Vulcano, Aeolian Islands, Italy, 403
- LONGSTAFFE, F.J., Cerný, P. and Muehlenbachs, K. Oxygen-isotope geochemistry of the granulitoid rocks in the Winnipeg River pegmatite district, southeastern Manitoba, 195
- LUSTENHOWER, W.J. with Burke, E.A.J., 311
- MAKOVICKY, E. with Karup-Møller, S., 349
- MANDARINO, J.A. Comments on the calculation of the density of minerals, 531
- _____, The Gladstone-Dale relationship: Part IV. The compatibility concept and its application, 441
- _____, with Sturman, B.D., 381
- MANNING, P.G., Birchall, T. and Jones, W. Ferric hydroxides in surficial sediments of the Great Lakes and their role in phosphorus availability: a Mössbauer spectral study, 525
- MARTIN, R.F. & Bowden, P. Peraluminous granites produced by rock-fluid interaction in the Ririwai nonorogenic ring-complex, Nigeria: mineralogical evidence, 65
- MASKE, S. with Tischler, S.E., 607
- MAURY, R.C. with d'Arco, P., 461
- MAZZETTI, G. with Bernardini, G.P., 451
- MEREWETHER, P.A. with Shelton, K.L., 599
- MERLINO, S., with Orlandi, P. 423
- MILES, N.M. with Ivarson, K.C., 429
- MILLER, C.F., Stoddard, E.F., Bradford, L.J. & Dollase, W.A. Composition of plutonic muscovite: genetic implications, 25
- MILLER, R. Kawazulite $\text{Bi}_2\text{Te}_2\text{Se}$, related bismuth minerals and selenian covellite from the Northwest Territories, 341
- MROSE, M.E. with Sturman, B.D., 381
- MUECKE, G.K. & Clarke, D.B. Geochemical evolution of the South Mountain batholith, Nova Scotia: rare-earth element evidence, 133
- MUEHLENBACHS, K. with Longstaffe, F.J., 195
- MURDOCH, A. and Bistricki, I. Occurrence of manganese-rich microparticles in the Eastern Basin of Lake Erie, 435
- NAGEL, J. with Lasmanis, R., 409
- NICKEL, E.H. and Berry, L.G. The new mineral nullaginite and additional data on the related minerals rosasite and glaukospaerite, 315
- ORLANDI, P., Merlino, S., Duchi, G., and Vezzalini, G. Colusite: a new occurrence and crystal chemistry, 423
- PAJARI, G.E., Jr., with Currie, K.L., 147
- PAUL, B.J., Cerný, P., Chapman, R. & Hinthorne, J.R. Niobian titanite form the Huron Claim pegmatite, southeastern Manitoba, 549
- PAUL, B.J. with Cerný, P., 541
- PEACOR, D.R. with Isaacs, A.M., 389
- PEACOR, D.R. with Sturman, B.D., 377
- PERRAULT, G., Chao, G.Y. and Chen, T.T. Additional data on petarosite from Mont St. Hilaire, Quebec, 411
- PESQUERA, A. with Velasco, F., 593
- PHILIPS, G.N., Wall, V.J. & Clemens, J.D. Petrology of the Strathgogie batholith: a cordierite-bearing granite, 47
- PHILPOTTS, A.R. A model for the generation of massif-type anorthosites, 233
- PIRET, P. with Deltens, M., 553
- POULIOT, G. & Hofmann, H.J. Florencite: a first occurrence in Canada, 535
- ROBERTS, A.C., Ansell, H.G. and Dunn, P.J. Comancheite, a new mercury oxychloride-bromide from Terlingua, Texas, 393
- ROBERTS, A.C. with Bonardi, M., 285
- _____, with Boyle, D.R., 325
- ROBERTSON, B.T. with Coleman, B.T., 373
- ROSS, G.J. with Ivarson, K.C., 429
- ROULSTON, B.V. and Waugh, D.C.E. A borate mineral assemblage from the Penobsquis and Salt Springs evaporite deposits of southern New Brunswick, 291
- ROWLEY, M.C. with Anderson, J.L., 83
- SABINA, A.P. with Bonardi, M., 285
- SHELTON, K.L., Merewether, P.A. & Skinner, B.J. Phases and phase relations in the system Pd-Pt-Sn, 599
- SKINNER, B.J. with Shelton, K.L., 599
- SONNET, P.M. Burtite, calcium hexahydroxostannate, a new mineral from El Hamman, central Morocco, 397
- SPEER, J.A. Petrology of cordierite- and almandine-bearing granulitoid plutons of the southern Appalachian Piedmont, U.S.A., 35
- SPOSATO, A. with Lombardi, G., 403
- STAMATELOPOULOU-SEYMOUR, K. and Francis, D.M. Metamorphic olivine in peridotitic komatiite flows, Lac Guyer: Quebec: reply, 361
- STEPHENS, W.E. with Halliday, A.N., 205
- STODDARD, E.F. with Miller, C.F., 25
- STROINK, G., Dunlap, R.A. and Hutt, D. Room temperature magnetization measurement of some Canadian chrysotile and UICC asbestos samples, 519
- STRONG, D.F. & Hanmer, S.K. The leucogranites of southern Brittany: origin by faulting, frictional heating, fluid flux and fractional melting, 163
- STURMAN, B.D., Mandarino, J.A., Mrose, M.E. and Dunn, P.J. Gormanite, $\text{Fe}_3^{2+}\text{Al}_4(\text{PO}_4)_4(\text{OH})_6 \cdot 2\text{H}_2\text{O}$, the ferrous analogue of souzalite, and new data for souzalite, 381
- _____, Peacor, D.R. and Dunn, P.J. Wicksite, a new mineral from northeastern Yukon Territory, 377
- _____, with Lasmanis, R., 409
- SZYMAŃSKI, J.T. with Chen, T.T., 571
- THOMSON, M.L., Fleet, M.E. and Barnett, R.L. Amphiboles from the Renzy Lake ultramafic complex, southwestern Quebec, 469
- TISCHLER, S.E., Cawthorn, R.G., Kingston, G.A. & Maske, S. Magmatic Cu-Ni-PGE mineralization at Waterfall Gorge, Insizwa, Pondoland, Transkei, 607
- TROSTI-FERRONNI, R. with Bernardini, G.P., 451
- TURNOCK, A.C. and Lindsley, D.H. Experimental determination of pyroxene solvi for $P < 1$ Kbar at 900 and 1000°C, 255
- VELASCO, F., Pesquera, A. & Autfage, F. Relation entre reflectivité et teneur en fer dans les sphalérites, 593
- VEZZALINI, G. with Orlandi, P., 423
- WALL, V.J. with Clemens, J.D., 111
- _____, with Philips, G.N., 47
- WATSON, D.M. with Boyle, D.R., 325
- WAUGH, D.C.E. with Roulston, B.V., 291
- ZAKRZEWSKI, M.A. with Burke, E.A.J., 419
- ZHANG, Yijun. Metamorphic olivine in peridotitic komatiite flows, Lac Guyer, Quebec: discussion, 361

Subject Index

- A borate mineral assemblage from the Penobsquis and Salt Springs evaporite deposits of southern New Brunswick (Roulston & Waugh), 291
- A model for the generation of massif-type anorthosites (Philpotts), 233
- A niobian rutile-disordered columbite intergrowth from the Huron Claim pegmatite, southeastern Manitoba (Cerny et al.), 541
- A system of nomenclature for regular interstratifications (Bailey), 653
- Additional data on petarosite form Mont St. Hilaire, Quebec (Perrault et al.), 411
- Additional data on robinsonite (Ayora & Gali), 415
- AFM liquidus projections for granitic magmas, with special reference to hornblende, biotite and garnet (Abbott), 103
- Ag- and Bi-rich heyrovskytte from the Bi-W-Mo mineralization at Castlegar, British Columbia (Karup-Møller & Makovicky), 349
- Amphiboles from the Renzy Lake ultramafic complex, southwestern Quebec (Thomson et al.), 469
- Anatectic peraluminous granites from the Carmanville area, northeastern Newfoundland (Currie & Pajari), 147
- Book review, 661
- Burtite, calcium hexahydroxostannate, a new mineral from El Hamman, central Morocco (Sonnet), 397
- Ca-Fe-Si skarns containing babingtonite: first known occurrence in Australia (Gole), 269
- Calculation of temperature and $X(\text{CO}_2)$ values for tremolite-K-feldspar-diopside-epidote assemblages (LeAnderson), 619
- CHEMICAL ANALYSIS (see also Electron microprobe analysis)

- Minerals**
 amphibole, 483, andradite, 271, babingtonite, 271, berthierine, 282, clinopyroxene, 482, garnet, 483, hedenbergite, 271, ilvzite, 271, nahpoite, 375, orthopyroxene, 482, rubidium-jarosite, 431, tamarugite, 403, 403
- Rocks**
 aplite 96, 182, biotite granite, 179, granite-adamellite, 56, 96, granite porphyry 70, mafic granules, 480, metaluminous granitoid 95, 156, ophiolite, 228, pegmatitic granite, 182, peraluminous granodiorite, 96, 156, 167, 179, quartz diorite, 179, rare earths in granite, 135, shale, 538, tonalite 96
- Culsite:** a new occurrence and crystal chemistry (Orlandi et al.), 423
- Comancheite,** a new mercury oxychloride-bronide form Terlingua, Texas (Roberts et al.), 393
- Comments on the calculation of the density of minerals (Mandarin),** 531
- Comparative geothermometry of some magnetite-ilmenite-orthopyroxene clinopyroxene associations from volcanic rocks (d'Arco & Maury),** 461
- Composition of plutonic muscovite: genetic implications (Miller et al.),** 25
- CRYSTALLOGRAPHY (see also Twinning)**
 colusite, 426, compatibility index, 441, Cs-Tl substitution, 577, Gladstone-Dale constants, 446, Gladstone-Dale relationship, 441, gormanite, 382, organic *k* values, 449, oxide *k* values, 443, petarasite, 411, swamboite, 553, Tl in sulfosalts, 575, two-dimensional symmetry, 217,
- CRYSTAL STRUCTURE (see also X-ray Diffraction)**
 galkhaite, 571
- Distribution of copper and gold in ophiolites from New Caledonia (Dupuy et al.),** 225
- D.T.A.**
 chlorophoenicite, 334, Cu-Fe-Se solid solutions, 455, dachiardite, 288, gormanite, 387, tamarugite, 404
- ELECTRON MICROPROBE ANALYSIS**
 actinolite, 636, albite, 637, amphiboles, 472, 621, 636, andradite, 271, anilite, 588, annite, 646, anorthositic glass, 239, apatite 41, ardaite, 420, atacamite, 340, biotite 21, 39, 54, 77, 621, 636, bismuthinite, 611, burtite, 399, calcite, 621, chlorite 42, 634, chlorophoenicite, 334, columbite, 543, colusite, 426, comancheite, 394, cordierite 39, 54, dachiardite, 287, diopside, 621, epidote 42, 621, 635, ferro-actinolite, 271, florencite, 537, froodite, 611, galena, 351, galkhaite, 573, garnet 21, 39, 54, 271, gormanite, 386, heyrovskite, 350, hornblende, 636, ilmenite 41, irarsite 611, jarosite, 360, 567, jeremejevitte 304, kawazulite, 344, k-feldspar, 621, magnesium-chlorophoenicite, 334, magnetite, 637, mercury jarosite, 360, muscovite 27, 42, niobian rutile, 543, niobian titanite, 550, nullagineite, 320, panasqueiraitte, 391, parkerite, 611, Pd-Pt-Sn solid solutions, 603, Pd-Sn compounds, 600, perhmanite, 312, perthite 41, petarasite, 412, plagioclase, 621, prehnite, 635, Pt-Sn compounds, 602, rhyodacite glass, 125, robinsonite, 416, rosasite, 322, selenian covellite, 346, souzalite, 386, sperryllite, 611, spertiniite, 340, sphalerite, 594, spinel, 54, stilpnomelane, 271, swamboite, 554, synthetic pyroxene, 257, tellurobismuthite, 344, titanite, 41, tourmaline 41, tremolite, 621, unnamed Bi-Cu-Pb-Se, 344, unnamed Bi-Se-Te, 344, unnamed Pb₅Te₄, 611, wicksite, 379
- EXPERIMENTAL (see also Petrology)**
General
 abrasion depth measurement, 355, anilite leaching, 583, density calculation, 531, electron-channeling patterns, 505, geothermometry equations, 463, jarosite by microbial oxidation, 429, magnetic susceptibility of asbestos, 519, manganese-fixing bacteria, 435, mercury jarosite, 559, Mg-Fe site occupancy in opx-cpx, 493, O-F calculation, 534, oxygen-isotope geochemistry, 195, 206, peraluminous granite magma, 111, petrogenetic AFM grid, 103, pyroxene solvi, 255, reflectivity vs. Fe in sphalerite, 593, strain-free polishing method, 508
- System**
 anorthositic glass, 242, CaSiO₃-MgSiO₃-FeSiO₃, 255, Cu-Fe-Se, 451, garnet-cordierite-biotite granite, 112, mercury-alkali jarosite, 565, Pd-Pt-Sn, 599
- Experimental determination of pyroxene solvi for P ≤ 1 kbar at 900 and 1000°C (Turnock & Lindsley),** 255
- Ferric hydroxides in surficial sediments of the Great Lakes and their role in phosphorus availability: a Mössbauer spectral study (Manning et al.),** 525
- Florencite:** a first occurrence in Canada (Pouliot & Hofmann), 535
- Formation of rubidium jarosite during the microbiological oxidation of ferrous iron at room temperature (Ivarson et al.),** 429
- From unit-cell to Si/Al distribution in K-feldspars: corrigendum (Ferguson),** 363
- Geochemical evolution of the South Mountain batholith, Nova Scotia: rare earth element evidence (Muecke & Clarke),** 133
- Gormanite, Fe₃Al₄(PO₄)₆(OH)₆·2H₂O, the ferrous analogue of souzalite, and new data for souzalite (Sturman et al.),** 381
- INFRARED SPECTRA**
 berthierine, 283, jeremejevitte, 305
- Isotopic and chemical constraints on the development of peraluminous Caledonian and Acadian granites (Halliday et al.),** 205
- Kawazulite Bi₂Te₂Se, related bismuth minerals and selenian covellite from the Northwest Territories (Miller),** 341
- La swamboite, nouveau silicate d'uranium hydraté du Shaba, Zaïre (Deliens & Piret),** 553
- La symétrie bidimensionnelle et le Canada (Brisse),** 217
- Magnetic Cu-Ni-PGE mineralization at Waterfall Gorge, Insizwa, Pondoland, Transkei (Tischler et al.),** 607
- Magnesium-chlorophoenicite redefined and new data on chlorophoenicite (Dunn),** 333
- Mandarinite from the DeLamar silver mine, Owyhee County, Idaho, U.S.A. (Lasmanis et al.),** 409
- Metamorphic olivine in peridotitic komatiite flows, Lac Guyer, Quebec: discussion (Zhang),** 361
- Metamorphic olivine in peridotitic komatiite flows, Lac Guyer: Quebec: reply. (Stamatelopoulos-Seymour & Francis),** 361
- Metamorphism of the Rossland volcanic rocks, southern British Columbia (Beddoe-Stephens),** 631
- MICROHARDNESS**
 colusite, 424, nullagineite, 321, pehrmanite, 312, pyrrhotite, 355, tellurobismuthite, 345, unnamed Bi-Cu-Pb-Se, 345
- Mineral chemistry of some mafic granulites from the Adirondack region (Jen & Kretz),** 479
- MINERALOGICAL ASSOCIATION OF CANADA**
 Hawley Award, 502, peraluminous granites, 1, preparation of manuscripts, 367
- MINERALS**
Mineral Data
 andradite, 271, anilite, 583, ardaite, 419, babingtonite, 269, berthierine, 279, biotite 21, 40, 54, 77, 93, 199, 621, 636, burtite, 295, burtite, 397, chlorophoenicite, 333, chrysotile, 520, columbite, 541, colusite, 423, comancheite, 393, cordierite 40, 54, dachiardite, 285, dorfmanite, 375, feldspar 73, 199, florencite, 535, froodite, 611, galkhaite, 571, garnet 21, 39, 54, 94, 271, gormanite, 381, heyrovskite, 349, howlite, 297, hydroboracite, 296, irarsite, 611, jarosite, 567, jeremejevitte, 303, kawazulite, 341, magnesium-chlorophoenicite, 333, magnetite, 522, mandarinite, 409, muscovite 25, 90, 199, nahpoite, 373, ningyoite, 325, niobian rutile, 541, niobian titanite, 549, nullagineite, 315, panasqueiraitte, 389, parkerite, 611, perhmanite, 311, petarasite, 411, quartz, 199, robinsonite, 415, sperryllite, 611, spertiniite, 337, sphalerite, 593, swamboite, 553, tamarugite, 403, tellurobismuthite, 341, unnamed Bi-Cu-Pb-Se, 344, unnamed Bi-Se-Te, 344, unnamed Pb₅Te₄, 611, volkovskite, 296, wickmanite, 398, wicksite, 377
- Mineral Occurrences**
 anilite Alberta 583, ardaite Sweden, 419, babingtonite Aust. 269, berthierine N.W.T. 279, biotite N.S. 19, U.S.A. 35, 93, Aust. 47, Nigeria 77, borates N.B. 291, burtite Morocco, 397, chlorophoenicite U.S.A. 333, columbite Man. 541, colusite Italy 423, comancheite U.S.A. 393, cordierite U.S.A. 35, Aust. 47, dachiardite Que. 285, feldspar Nigeria, 73, florencite N.W.T. 535, froodite Transkei, 607, galkhaite U.S.A. 571, garnet N.S. 19, U.S.A. 41, 94, Aust. 47, gormanite Yukon 381, heyrovskite B.C. 349, jeremejevitte Namibia 303, U.S.S.R. 303, kawazulite N.W.T. 341, magnesium-chlorophoenicite, U.S.A. 333, mandarinite U.S.A. 409, muscovite U.S.A. 25, 90, nahpoite Yukon 373, ningyoite B.C. 325, niobian rutile Man. 541, niobian titanite Man. 549, nullagineite Aust. 315, panasqueiraitte Portugal 389, parkerite Transkei, 607, perhmanite Finland, 311, petarasite Que. 411, robinsonite Spain 415, sperryllite Transkei, 607, spertiniite Que. 337, swamboite Zaire, 553, tamarugite Italy 403, tellurobismuthite N.W.T. 341, wicksite Yukon, 377
- MÖSSBAUER SPECTROSCOPY**
 chlorite, 526, Fe(OH)₃, 526, muscovite 29
- Nahpoite Na₂HPO₄, a new mineral from the Big Fish River area, Yukon Territory (Coleman & Robertson),** 373
- New data for jeremejevitte (Foord et al.),** 303
- NEW MINERALS**
 burtite, 397, comancheite, 393, gormanite, 381, nahpoite 373, nullagineite, 315, panasqueiraitte, 389, pehrmanite, 311, spertiniite, 337, swamboite, 553, unnamed Bi-Cu-Pb-Se, 344, unnamed Bi-Se-Te, 344, unnamed Pb₅Te₄, 611, wicksite, 377
- Ningyoite in uranium deposits of south-central British Columbia: first North American occurrence (Boyle et al.),** 325

Niobian titanite from the Huron Claim pegmatite, southeastern Manitoba (Paul et al.), 549

NOMENCLATURE

alietite, 654, burtite, 397, comancheite, 393, corrensite, 654, galkhaite, 571, glaukosphaerite, 321, gormanite, 381, jarosite, 429, jeremejevitte, 303, kulkeite, 655, magnesium-chlorophoenicite, 333, nahpoite, 373, new mineral descriptions, 659, niobian rutile, 546, nullaginite, 315, panasqueiraite, 389, Pd-Pt-Sn compounds, 599, peraluminous granite, 3, 207, perhmanite, 311, rectorite, 655, regularly interstratified clay minerals, 653, robinsonite, 415, rosasite group, 321, sodium-dachiardite, 288, spertiniite, 337, swamboite, 553, tarasovite, 655, tosudite, 656, wicksite, 377

Note on the hardness of hexagonal pyrrhotite and a method for measuring the abrasion depth in sulfides (Kubler), 355

Occurrence and origin of garnets in the South Mountain batholith, Nova Scotia, (Allan & Clarke), 19

Occurrence of berthierine in Canadian Arctic desert soils (Kodama & Foscolos), 279

Occurrence of manganese-rich microparticles in the Eastern Basin of Lake Erie (Murdoch & Bistricki), 435

OPTICAL ABSORPTION SPECTRA

jeremejevitte, 306

OPTICAL PROPERTIES

General

annite, 645, babingtonite, 272, burtite, 399, comancheite, 394, dachiardite, 287, florencite, 536, gormanite, 385, jeremejevitte, 308, leached anilite, 589, mandarinoite, 409, nahpoite, 374, ningyoite, 327, niobian titanite, 550, nullaginite, 320, panasqueiraite, 390, pehrmanite, 312, petarasite, 412, souzalite, 386, spertiniite, 339, swamboite, 554, tamarugite, 404, wicksite, 379

Reflectance

ardaite, 420, colusite, 424, kawazulite, 345, pehrmanite, 312, sphalerite, 594, tellurobismuthite, 345, unnamed Bi-Cu-Pb-Se, 345

Origin and crystallization of some peraluminous (S-type) granitic magmas (Clemens & Wall), 111

Oxygen-isotope geochemistry of the granitoid rocks in the Winnipeg River pegmatite district, southeastern Manitoba (Longstaffe et al.), 195

Panasqueiraite, a new mineral: the OH-equivalent of isokite (Isaacs & Peacor), 389

Pehrmanite, a new beryllium mineral from the Rosendal pegmatite, Kemio Island, southwestern Finland (Burke & Lustenhouwer), 311

Peraluminous granites produced by rock-fluid interaction in the Ririwai nonorogenic ring-complex, Nigeria: mineralogical evidence (Martin & Bowden), 65

Peraluminous pegmatitic granites and their pegmatite aureoles in the Winnipeg River district, Southeastern Manitoba (Goad & Cerný), 177

PETROLOGY (see also Experimental)

anatectic peraluminous granite, 147, 163, babingtonite skarn, 269, copper-gold geochemistry, 225, cordierite-biotite assemblage, 42, 48, 112, fabric analysis, 513, Fe³⁺ in muscovite, 29, 90, genesis of anorthositic magma, 233, genesis of borate-evaporates, 299, genesis of peraluminous magma, 42, 58, 79, 97, 103, 111, 157, 170, 191, 200, 214, geothermometry, 266, 461, 619, granulite invariant point, 484, immiscible sulfide liquid, 614, Insizwa intrusion genesis, 613, Mg-Fe distribution opx-cpx, 487, 493, Mg-Fe zoning in annite, 647, nomenclature for regularly interstratified clay minerals, 653, origin of sector-zoning, 649, pegmatitic granite, 177, plutonic muscovite 25, 90, pyroxene geothermometer, 266, rare earths in shale, 538, REE enrichment in fluorite, 139, Rossland volcanic suite, 631, tremolite-k-feldspar-diopside equilibria, 619, T-X(CO₂) diagram, 619

Petrology of cordierite-and almandine-bearing granitoid plutons of the southern Appalachian Piedmont, U.S.A. (Speer), 35

Petrology of the Strathbogie batholith: a cordierite-bearing granite (Philips et al.), 47

Phases and phase relations in the system Pd-Pt-Sn (Shelton et al.), 599

Relation entre réflectivité et teneur en fer dans les sphalérites (Velasco et al.), 593

Room temperature magnetization measurements of some Canadian chrysotile and UICC asbestos samples (Stroink et al.), 519

Sector zoned annite₅ phlogopite₅ micas from the Mt. Lindsay Sn-W-F-(Be) deposit, Tasmania, Australia (Kwak), 643

Selected-area electron channeling patterns from geological materials: specimen preparation, indexing and representation of patterns, and applications (Lloyd et al.), 505

Site-occupancy interpretation of the distribution of Mg and Fe between orthopyroxene and clinopyroxene in metamorphic rocks (Kretz), 493

Sodium-rich dachiardite from the Francon quarry, Montreal Island, Quebec (Bonardi et al.), 285

Spertiniite, Cu(OH)₂, a new mineral from the Jeffrey mine, Quebec (Grice & Gasparini), 337

Suggested outline for descriptions of new minerals, 659

Synkinematic intrusion of peraluminous and associated metaluminous granitic magmas, Whipple Mountains, California (Anderson & Rowley), 83

Tamarugite form Vulcano, Aeolian Islands, Italy (Lombardi & Sposato), 403

TEXTURES

andradite-hedenbergite-babingtonite, 273, coexisting amphiboles, 470, fabric analysis, 5132, garnet-biotite, 22, 54, kawazulite, 342, niobian rutile-columbite, 541, peraluminous granite, 5, 51, perthite, 71, sector zoned annite, 643, silicate immiscibility in anorthosite, 246

The Gladstone-Dale relationship: Part IV. The compatibility concept and its application (Mandarino), 441

The leaching of copper from anilite and the production of a metastable copper sulfide structure (Goble), 583

The leucogranites of southern Brittany: origin by faulting, frictional heating, fluid flux and fractional melting (Strong & Hanmer), 163

The mineralogy of peraluminous granites: a review (Clarke), 3

The new mineral nullaginite and additional data on the related minerals rosasite and glaukosphaerite (Nickel & Berry), 315

The second occurrence of ardite: Gruvasen, Bergslagen, Sweden (Burke et al.), 419

The structure and chemistry of galkhaite, a mercury sulfosalt containing Cs and Tl (Chen & Szymański), 571

The synthesis of mercury jarosite and the mercury concentration in jarosite-family minerals (Dutrizaac & Chen), 559

The system Cu-Fe-Se: reconnaissance phase relations between 500 and 700°C (Bernardini et al.), 451

T.G.A.

gormanite, 387, tamarugite, 404, wicksite, 379,

TWINNING (see also Crystallography)

burtite, 400, dachiardite, 288,

Wicksite, a new mineral from northeastern Yukon Territory (Sturman et al.), 377

X-RAY DIFFRACTION (see also Crystal Structure)

Cell Dimensions

babingtonite, 272, burtite, 400, columbite, 543, colusite, 425, comancheite, 395, dachiardite, 289, feldspar, 73, florencite, 536, galena, 352, galkhaite, 574, glaukosphaerite, 322, gormanite, 382, heyrovskyite, 351, jeremejevitte, 308, nahpoite, 375, ningyoite, 322, niobian rutile, 543, niobian titanite, 550, nullaginite, 318, panasqueiraite, 390, pehrmanite, 313, robinsonite, 416, rosasite, 321, souzalite, 383, spertiniite, 339, swamboite, 555, wicksite, 378,

Powder Data

anilite, 588, annite, 647, berthierine, 280, burtite, 400, colusite, 425, comancheite, 395, dachiardite, 288, galkhaite, 578, glaukosphaerite, 319, gormanite, 384, isokite, 390, jeremejevitte, 309, nahpoite, 374, ningyoite, 322, nullaginite, 319, panasqueiraite, 390, pehrmanite, 313, robinsonite, 416, rosasite, 319, rubidium-jarosite, 431, souzalite, 384, spertiniite, 339, swamboite, 555, wicksite, 378

THE CANADIAN MINERALOGIST

**Journal of the
Mineralogical Association
of Canada**



**Editors, L.J. Cabri
R.F. Martin**

Volume 19, 1981

THE CANADIAN MINERALOGIST

Volume 19, Index

Contents

Introduction	D. B. CLARKE	1
The mineralogy of peraluminous granites: a review	D. B. CLARKE	3
Occurrence and origin of garnets in the South Mountain batholith, Nova Scotia	B. D. ALLAN & D. B. CLARKE	19
Composition of plutonic muscovite: genetic implications	C. F. MILLER, E. F. STODDARD, L. J. BRADFISH & W. A. DOLLASE	25
Petrology of cordierite- and almandine-bearing granitoid plutons of the southern Appalachian Piedmont, U.S.A.	J.A. SPEER	35
Petrology of the Strathbogie batholith: a cordierite-bearing granite	G. N. PHILLIPS, V. J. WALL & J. D. CLEMENS	47
Peraluminous granites produced by rock-fluid interaction in the Ririwai nonorogenic ring-complex, Nigeria: mineralogical evidence	R. F. MARTIN & P. BOWDEN	65
Synkinematic intrusion of peraluminous and associated metaluminous granitic magmas, Whipple Mountains, California	J. L. ANDERSON & M. C. ROWLEY	83
AFM liquidus projections for granitic magmas, with special reference to hornblende, biotite and garnet	R. N. ABBOTT, JR.	103
Origin and crystallization of some peraluminous (S-type) granitic magmas	J. D. CLEMENS & V. J. WALL	111
Geochemical evolution of the South Mountain batholith, Nova Scotia: rare-earth-element evidence	G. K. MUECKE & D. B. CLARKE	133
Anatectic peraluminous granites from the Carmanville area, northeastern Newfoundland	K. L. CURRIE & G. E. PAJARI, JR.	147
The leucogranites of southern Brittany: origin by faulting, frictional heating, fluid flux and fractional melting	D. F. STRONG & S. K. HANMER	163
Peraluminous pegmatitic granites and their pegmatite aureoles in the Winnipeg River district, southeastern Manitoba	B. E. GOAD & P. ČERNÝ	177
Oxygen-isotope geochemistry of the granitoid rocks in the Winnipeg River pegmatite district, southeastern Manitoba	F.J. LONGSTAFFE, P. ČERNÝ & K. MUEHLENBACHS	195
Isotopic and chemical constraints on the development of peraluminous Caledonian and Acadian granites	A. N. HALLIDAY, W. E. STEPHENS & R. S. HARMON	205

La symétrie bidimensionnelle et le Canada	F. BRISSE	217
Distribution of copper and gold in ophiolites from New Caledonia	C. DUPUY, J. DOSTAL & M. LEBLANC	225
A model for the generation of massif-type anorthosites	A. R. PHILPOTTS	233
Experimental determination of pyroxene solvi for $P \leq 1$ kbar at 900 and 1000°C	A. C. TURNOCK & D. H. LINDSLEY	255
Ca-Fe-Si skarns containing babingtonite: first known occurrence in Australia	M. J. GOLE	269
Occurrence of berthierine in Canadian Arctic desert soils	H. KODAMA & A. E. FOSCOLOS	279
Sodium-rich dachiardite from the Francon quarry, Montreal Island, Quebec	M. BONARDI, A.C. ROBERTS, A.P. SABINA & G.Y. CHAO	285
A borate-mineral assemblage from the Penobsquis and Salt Springs evaporite deposits of southern New Brunswick	B. V. ROULSTON & D. C. E. WAUGH	291
New data for jeremejevit	E. E. FOORD, R. C. ERD & G. R. HUNT	303
Pehrmanite, a new beryllium mineral from the Rosendal pegmatite, Kemiö Island, southwestern Finland	E. A. J. BURKE & W. J. LUSTENHOUWER	311
The new mineral nullaginite and additional data on the related minerals rosasite and glaukosphaerite	E. H. NICKEL & L. G. BERRY	315
Ningyoite in uranium deposits of south-central British Columbia: first North American occurrence	D. R. BOYLE, A. L. LITTLEJOHN, A. C. ROBERTS & D. M. WATSON	325
Magnesium-chlorophoenicite redefined and new data on chlorophoenicite	P. J. DUNN	333
Spertiniite, $\text{Cu}(\text{OH})_2$, a new mineral from the Jeffrey mine, Quebec	J. D. GRICE & E. GASPARRINI	337
Kawazulite $\text{Bi}_2\text{Te}_2\text{Se}$, related bismuth minerals and selenian covellite from the Northwest Territories	R. MILLER	341
Ag- and Bi-rich heyrovskyite from the Bi-W-Mo mineralization at Castlegar, British Columbia	S. KARUP-MØLLER & E. MAKOVICKY	349
Note on the hardness of hexagonal pyrrhotite and a method for measuring the abrasion depth in sulfides	L. KÜBLER	355
Metamorphic olivine in peridotitic komatiite flows, Lac Guyer, Quebec: discussion	YIJUN ZHANG	361
Metamorphic olivine in peridotitic komatiite flows, Lac Guyer: Quebec: reply	K. STAMATELOPOULOU - SEYMOUR & D. M. FRANCIS	361
From unit-cell parameters to Si/Al distribution in K-feldspars: corrigendum	R. B. FERGUSON	363
Preparation of manuscripts		367
Errata		369
Nahpoite Na_2HPO_4 , a new mineral from the Big Fish River area, Yukon Territory	L.C. COLEMAN & B.T. ROBERTSON	373
Wicksite, a new mineral from northeastern Yukon Territory	B.D. STURMAN, D.R. PEACOR & P.J. DUNN	377
Gormanite, $\text{Fe}^{2+}_3\text{Al}_4(\text{PO}_4)_4(\text{OH})_6 \cdot 2\text{H}_2\text{O}$, the ferrous analogue of souzalite, and new data for souzalite	B.D. STURMAN, J.A. MANDARINO, M.E. MROSE & P.J. DUNN	381

Panasqueiraite, a new mineral: the OH-equivalent of isokite A.M. ISAACS & D.R. PEACOR	389
Comancheite, a new mercury oxychloride-bromide from Terlingua, Texas A.C. ROBERTS, H.G. ANSELL & P.J. DUNN	393
Burtite, calcium hexahydroxostannate, a new mineral from El Hamman, central Morocco P.M. SONNET	397
Tamarugite from Vulcano, Aeolian Islands, Italy G. LOMBARDI & A. SPOSATO	403
Mandarinoite from the De Lamar silver mine, Owyhee County, Idaho, U.S.A. R. LASMANIS, J. NAGEL, B.D. STURMAN & R.I. GAIT	409
Additional data on petarasite from Mont St. Hilaire, Quebec G. PERRAULT, G.Y. CHAO & T.T. CHEN	411
Additional data on robinsonite C. AYORA & S. GALI	415
The second occurrence of ardaite: Gruvåsen, Bergslagen, Sweden E.A.J. BURKE, C. KIEFT & M.A. ZAKRZEWSKI	419
Colusite: a new occurrence and crystal chemistry P. ORLANDI, S. MERLINO, G. DUCHI & G. VEZZALINI	423
Formation of rubidium jarosite during the microbiological oxidation of ferrous iron at room temperature K.C. IVARSON, G.J. ROSS & N.M. MILES	429
Occurrence of manganese-rich microparticles in the Eastern Basin of Lake Erie A. MURDOCH & T. BISTRICKI	435
The Gladstone-Dale relationship: Part IV. The compatibility concept and its application J.A. MANDARINO	441
The system Cu-Fe-Se: reconnaissance phase relations between 500 and 700°C G.P. BERNARDINI, G. MAZZETTI & R. TROSTI-FERRONI	451
Comparative geothermometry of some magnetite-ilmenite-orthopyroxene- clinopyroxene associations from volcanic rocks P. d'ARCO & R.C. MAURY	461
Amphiboles from the Renzy Lake ultramafic complex, southwestern Quebec M.L. THOMSON, M.E. FLEET & R.L. BARNETT	469
Mineral chemistry of some mafic granulites from the Adirondack region L.S. JEN & R. KRETZ	479
Site-occupancy interpretation of the distribution of Mg and Fe between orthopyroxene and clinopyroxene in metamorphic rocks R. KRETZ	493
Proceedings of the twenty-sixth annual meeting of the Mineralogical Association of Canada	501
Selected-area electron-channeling patterns from geological materials: specimen preparation, indexing and representation of patterns, and applications G.E. LLOYD, M.G. HALL, B. COCKAYNE & D.W. JONES	505
Room-temperature magnetization measurements of some Canadian chrysotile and UICC asbestos samples G. STROINK, R.A. DUNLAP & D. HUTT	519
Ferric hydroxides in surficial sediments of the Great Lakes and their role in phosphorus availability: a Mössbauer spectral study P.G. MANNING, T. BIRCHALL & W. JONES	525
Comments on the calculation of the density of minerals J.A. MANDARINO	531
Florencite: a first occurrence in Canada G. POULIOT & H.J. HOFMANN	535

A niobian rutile – disordered columbite intergrowth from the Huron Claim pegmatite, southeastern Manitoba	P. CERNY, B.J. PAUL, F.C. HAWTHORNE & R. CHAPMAN	541
Niobian titanite from the Huron Claim pegmatite, southeastern Manitoba	B.J. PAUL, P. CERNY, R. CHAPMAN & J.R. HINTHORNE	549
La swamboïte, nouveau silicate d'uranium hydraté du Shaba, Zaïre	M. DELIENS & P. PIRET	553
The synthesis of mercury jarosite and the mercury concentration in jarosite-family minerals	J.E. DUTRIZAC & T.T. CHEN	559
The structure and chemistry of galkhaite, a mercury sulfosalt containing Cs and Tl	T.T. CHEN & J.T. SZYMANSKI	571
The leaching of copper from anilite and the production of a metastable copper sulfide structure	R.J. GOBLE	583
Relation entre réflectivité et teneur en fer dans les sphalérites	F. VELASCO, A. PESQUERA & F. AUTEFAGE	593
Phases and phase relations in the system Pd–Pt–Sn	K.L. SHELTON, P.A. MEREWETHER & B.J. SKINNER	599
Magmatic Cu–Ni–PGE mineralization at Waterfall Gorge, Insizwa, Pondoland, Transkei	S.E. TISCHLER, R.G. CAWTHORN, G.A. KINGSTON & S. MASKE	607
Calculation of temperature and $X(\text{CO}_2)$ values for tremolite – K-feldspar – diopside – epidote assemblages	P.J. LEANDERSON	619
Metamorphism of the Rossland volcanic rocks, southern British Columbia	B. BEDDOE-STEPHENS	631
Sector-zoned annite ₈₈ phlogopite ₁₃ micas from the Mt. Lindsay Sn–W–F(–Be) deposit, Tasmania, Australia	T.A.P. KWAK	643
A system of nomenclature for regular interstratifications	S.W. BAILEY	651
Suggested outline for new mineral descriptions		657
Book review		659
Index	J.D. SCOTT & L.K. BOWRING	661

**19th ANNUAL
SHORT SUMMER COURSE IN X-RAY SPECTROMETRY**

The 19th annual short course in modern X-ray spectrometry will be offered at the State University of New York at Albany from June 7 to June 18, 1982. The course will be instructional and will develop the basic theory and techniques starting from elementary principles. No previous knowledge or experience is required. The first week will cover basic principles, techniques and practical applications and the second week will continue with further fundamentals and practical applications. Both weeks will illustrate and employ equally the wavelength-dispersive and energy-dispersive methods. Emphasis in the second week will be placed on advanced principles and techniques, absorption-enhancement corrections by several procedures including mathematical methods, computer calculations and computer automation of modern X-ray spectrometers. Equal time will be devoted to lectures and laboratory problem-solving sessions. Registration may be made for one week, either week, at a registration fee of \$675.00 or for the entire two-week session at a registration fee of \$1,250.00 payable in U.S. dollars drawn on a U.S. bank. For further information and to register please communicate with:

Professor Henry Chessin
State University of New York at Albany
Department of Physics
1400 Washington Avenue
Albany, New York 12222, U.S.A.
518/457-8339

**19th ANNUAL
SHORT SUMMER COURSE IN X-RAY POWDER DIFFRACTION**

The 19th annual two-week short course in modern X-ray powder diffraction will be offered at the State University of New York at Albany from June 21 to July 2, 1982. The course will be instructional and will develop the basic theory and techniques starting from elementary principles. No previous knowledge or experience is required. The first week will cover basic principles, techniques and practical applications, and the second week will continue with further fundamentals and practical applications. Emphasis in the first week will be on camera and film techniques, X-ray instrumentation, especially the diffractometer and its use, identification of powder patterns, multiphase identification using the several indices and fundamentals of quantitative analysis. The second week will cover more advanced principles and techniques with emphasis on diffractometer alignment, complex quantitative analysis, complex powder identifications, computer automation of diffractometers and computer search-match methods. Equal time will be devoted to lectures and laboratory problem-solving sessions. A suitable amount of time will be set aside for individual problems. Registration may be made for one week, either week, at a registration fee of \$675.00 or for the entire two-week session at a registration fee of \$1,250.00 payable in U.S. dollars drawn on a U.S. bank. For further information and to register please communicate with:

Professor Henry Chessin
State University of New York at Albany
Department of Physics
1400 Washington Avenue
Albany, New York 12222, U.S.A.
518/457-8339

FIRST INTERNATIONAL SYMPOSIUM ON CRYSTAL-GROWTH PROCESSES IN SEDIMENTARY ENVIRONMENTS

The first International Symposium on Crystal-Growth Processes in Sedimentary Environments will be held in Madrid, Spain from April 13 to 16, 1982, under the auspices of the International Mineralogical Association, the IMA Commission on Crystal Growth, the Spanish Council for Scientific Research, the Spanish Mineralogical Society and the Instituto Geológico y Minero de España.

The Symposium will provide a forum in which to explore the interface between the science of crystal growth and the science of sedimentation and sedimentary petrology, and in which to report and discuss recent studies on crystal-growth processes in sedimentary environments. The symposium is organized in view of the increasing importance of the knowledge of crystal-growth mechanisms in understanding the formation of sedimentary rocks and diagenetic processes.

The symposium will consist of lectures by invited speakers (about ten speakers are expected), round-table discussions led by invited speakers and contributed papers presented by the assistants in the form of posters. Those who are interested in this symposium may obtain further information from Dr. R. Rodríguez Clemente, Instituto de Geología, Consejo Superior de Investigaciones Científicas, c/ José Gutiérrez Abascal, 2, Madrid -6, Spain. The registration fee is fixed at \$100 US, and the deadline for submission of abstracts of contributed papers is December 20, 1981.

Mineralogical Association of Canada

Regular back copies of Canadian Mineralogist of particular interest are:

- Vol. 10, Pt. 3, "Alkaline rocks; The Monteregian Hills" ed. by G. Perrault.
- Vol. 11, Pt. 1, "The silver-arsenide deposits of the Cobalt-Gowganda region, Ontario" by W. Petruk, J. L. Jambor and others.
- Vol. 11, Pt. 3, "The Tanco pegmatite at Bernic Lake, Manitoba" by P. Cerný, R. B. Ferguson and others.
- Vol. 12, Pt. 7, "Low-grade metamorphism" by W. S. Fyfe, E-an Zen and others.
- Vol. 14, Pt. 1, "Environmental aspects of mineralogy and sedimentary geochemistry" ed. by J. R. Kramer.
- Vol. 14, Pt. 3, "Water and magma genesis" ed. by A. D. Edgar.
- Vol. 15, Pt. 2, "Silicate melts and magmas" ed. by C. M. Scarfe and A. J. Piwinski; "Garnets" ed. by E. D. Ghent.

Special editions:

- Vol. 7, Pt. 1, "The Sudbury ores; their mineralogy and origin" by J. E. Hawley (Hard cover) \$10.00
- Vol. 10, Pt. 3, "Alkaline rocks; the Monteregian Hills" edited by G. Perrault (Hard cover) \$10.00
- Vol. 11, Pt. 1, "The silver-arsenide deposits of the Cobalt-Gowganda region, Ontario" by W. Petruk, J. L. Jambor and others (Hard cover) \$10.00
- Vol. 17, Pt. 2, "Nickel-sulfide and platinum-group element deposits" ed. by A. J. Naldrett (Soft cover) \$10.00
- Vol. 17, Pt. 4, "Serpentine mineralogy, petrology and paragenesis" ed. by F. J. Wicks (Soft cover) \$8.00
- Vol. 19, Pt. 1, "Peraluminous Granites" ed. by D. B. Clarke, \$10.00.

MAC short course handbooks:

1. "Microbeam techniques" ed. by D. G. W. Smith (\$7.50) (out of print)
2. "Application of thermodynamics to petrology and ore deposits" ed. by H. J. Greenwood (\$7.50).
3. "Uranium deposits; their mineralogy and origin" ed. by M. M. Kimberley (\$12.00).
4. "Mineralogical techniques of asbestos determination" ed. by R. L. Ledoux (\$10.00).
"Les techniques de détermination minéralogique de l'amiante" ed. by R. L. Ledoux (\$10.00).
5. "Neutron activation analysis in the geosciences" ed. by G. K. Muecke (\$10.00).
6. "Fluid Inclusions: Applications to Petrology" ed. by L. S. Hollister and M. L. Crawford (\$12.00).
7. "Clays and the Resource Geologist" ed. by F. J. Longstaffe (\$12.00)