

References Cited

- Allen, T., 1996, Petrology and Stable Isotope Systematics of Migmatites in Pinkham Notch, NH. Mark Van Baalen, editor, Guidebook to Field Trips in Northern New Hampshire and Adjacent Regions of Maine and Vermont, New England Intercollegiate Geologic Conference, 88th Annual Meeting, pp. 279-298.
- Allibone, A. H. & Norris, R. J., 1992. Segregation of leucogranite microplutons during synanatectic deformation: an example from the Taylor Valley, Antarctica. *Journal of Metamorphic Geology* **10**, 589-600.
- Barraud, J., Gardien, V., Allemand, P and Grandjean, P., 2001, Analog modeling of melt segregation and migration during deformation. *JPhysics and Chemistry of the Earth, Part A*, **26**, 317-323.
- Barraud, J., Gardien, V., Allemand, P. and Grandjean, P., 2001, Strain-dependence of the melt migration in partially molten crustal rocks. *Journal of the Virtual Explorer*, **4**, <http://virtualexplorer.com.au>.
- Barraud, J., Gardien, V., Allemand, P. and Grandjean, P., 2004, Analogue models of melt-flow networks in folding migmatites. *Journal of Structural Geology*, **26**, 307-324.
- Benn, K., Cruden, A.R. & Sawyer, E.W., 1998. Preface. *Journal of Structural Geology* **20**, Special Issue: Extraction, transport and emplacement of granitic magmas.
- Bradley, D.C., 1983. Tectonics of the Acadian orogeny in New England and adjacent Canada. *Journal of Geology* **91**, 381-400.
- Bradley, D. C., Tucker, R. D., Lux, D. R., Harris, A. G., McGregor, D. C., 1998. Migration of the Acadian orogen and foreland basin across the northern Appalachians. U.S. Geological Survey, Open-File Report **98-770**, 79p.
- Braun, J., Beaumont, C., 1995. Three-dimensional numerical experiments of strain partitioning at oblique plate boundaries: Implication for contrasting tectonic styles in the Southern Coast Ranges, California, and Central South Island, New Zealand. *Journal of Geophysical Research* **100**, 18,058-18,074.
- Brown, M., 1994. The generation, segregation ascent and emplacement of granite magma: the migmatite-to-crustally derived granite connection in thickened orogens. *Earth Science Reviews* **36**, 83-130.
- Brown, M., Averkin, Y.A., McLellan, E.L. & Sawyer, E.W., 1995. Melt segregation in migmatites. *Journal of Geophysical Research* **100**, 15655-15679.
- Brown, M., Rushmer, T., 1997. The role of deformation in the movement of granite melt: views from the laboratory and the field. In: Holness, M.B. (Ed.), *Deformation-enhanced Fluid Transport in the Earth's Crust and Mantle*. The Mineralogical Society Series 8, Chapman and Hall, London, pp. 111-144.
- Brown, M., Solar, G.S., 1998a. Shear zones and melts: positive feedback in orogenic belts. *Journal of Structural Geology* **20**, 217-231.
- Brown, M., Solar, G.S., 1998b. Granite ascent and emplacement during contractional deformation in convergent orogens. *Journal of Structural Geology* **20**, 1365-1393.
- Brown, M., Solar, G.S., 1999. The mechanism of ascent and emplacement of granite magma during transpression: a syntectonic granite paradigm. *Tectonophysics* **312**, 1-33.
- Brown, M.A., Brown, M., Carlson, W.D., Denison, C., 1999. Topology of syntectonic melt flow networks in the deep crust: inferences from three-dimensional images of leucosome geometry in migmatites. *American Mineralogist* **84**, 1793-1818.
- Chamberlain, C.P., Lyons, J.B., 1983, Pressure, temperature and metamorphic zonation studies of pelitic schists in the Merrimack synclinorium, south central New Hampshire. *American Mineralogist*, **68**, 530-540.
- Chmura, S.M., Solar, G.S., 2001, The record of granite magma flow through deforming rocks, comparative meter-scale mapping of contrasting types of migmatite in western Maine, USA. *Geological Society of America Abstracts with Programs*, **33**.
- Clemens, J.D., Mawer, C.K., 1992. Granitic magma transport by fracture propagation. *Tectonophysics* **204**, 339-360.
- Cocks, L.R.M., McKerrow, W.S., van Staal, C.R., 1997. The margins of Avalonia. *Geological Magazine*

134, 627-636.

- Collins, W.J., Sawyer, E.W., 1996. Pervasive granitoid magma transfer through the lower-middle crust during non-coaxial compressional deformation. *Journal of Metamorphic Geology* **14**, 565-579.
- Cruden, A.R., 1998. On the emplacement of tabular granites. *Journal of the Geological Society, London* **154**, 853-862.
- Dewey, J. F., Holdsworth, R. E., Strachan, R. A., 1999. Transpression and transtension zones. Holdsworth, R. E., Strachan, R. A., Dewey, J. F. (Eds.), *Continental transpressional and transtensional tectonics*, Geological Society Special Publications **135**, 1-14.
- De Yoreo, J.J., Lux, D.R., Guidotti, C.V., 1991. Thermal modelling in low-pressure/high-temperature metamorphic belts. *Tectonophysics* **188**, 209-238.
- D'Lemos, R.S., Brown, M., Strachan, R.A., 1992. Granite magma generation, ascent and emplacement within a transpressional orogen. *Journal of the Geological Society, London* **149**, 487-490.
- Dougan, 1979, Compositional and model relationships and melting reactions in some migmatitic metapelites from New Hampshire and Maine. *American Journal of Science*, **279**, 897-935.
- Dougan, 1981, Melting reactions and trace element relationships in selected specimens of migmatitic pelites from New Hampshire and Maine. *Contributions to Mineralogy and Petrology*, **78**, 337-344.
- Dougan, 1983, Textural relations in melanosomes of selected specimens of migmatitic pelitic schists: implications for leucosome-generating processes. *Contributions to Mineralogy and Petrology*, **83**, 82-98.
- Dorais, M.J., 2003, The petrogenesis and emplacement of the New Hampshire plutonic suite. *American Journal of Science*, **303**, 447-487.
- Dorais, M.J., Paige, M.L., 2000. Regional mineralogical and isotopic variations in the posttectonic Acadian plutons of New Hampshire, Maine, and Vermont: Implications for magma sources and Greenville-Avalon basement terrane boundaries. *Geological Society of America Bulletin*, **112**, 900-914.
- Eusden, J.D., Jr., Barreiro, B., 1988. The timing of peak high-grade metamorphism in central-eastern New England. *Maritime Sedimentation and Atlantic Geology* **24**, 241-255.
- Grocott, J., Brown, M., Dallmeyer, R.D., Taylor, G.K., Treloar, P.J., 1994. Mechanisms of continental growth in extensional arcs: An example from the Andean Plate Boundary Zone. *Geology* **22**, 391-394.
- Grujic, D., Mancktelow, N.S., 1995, Folds with axes parallel to the extension direction: an experimental study. *Journal of Structural Geology*, **17**, 279-291.
- Guidotti, C.V., 1970. The mineralogy and petrology of the transition from lower to upper sillimanite zone in the Oquossoc area, Maine. *Journal of Petrology* **11**, 277-336.
- Guidotti, C.V., 1974. Transition from staurolite to sillimanite zone, Rangeley quadrangle, Maine. *Geological Society of America Bulletin* **85**, 475-490.
- Guidotti, C.V., 1989. Metamorphism in Maine: an overview. In: Tucker, R.D., Marvinney, R.G. (Eds.), *Studies in Maine Geology*, **3**; *Igneous and Metamorphic Geology*, Maine Geological Survey, 1-19.
- Hanson, G.N., 1978, The application of trace elements to the petrogenesis of igneous rocks of granitic composition. *Earth and Planetary Science Letters*, **38**, 26-43.
- Harland, W.B., 1971. Tectonic transpression in Caledonian Spitsbergen. *Geological Magazine* **108**, 27-42.
- Hatch, N.L., Jr., Moench, R.H., Lyon, J.B., 1983. Silurian-lower Devonian stratigraphy of eastern and south-central New Hampshire: Extensions from western Maine. *American Journal of Science* **283**, 739-761.
- Hogan, J.P., Sinha, A.K., 1989. Compositional variation of plutonism in the coastal Maine magmatic province: Mode of origin and tectonic setting. In: Tucker and Marvinney (Eds.), *Studies in Maine Geology*, **4**; *Igneous and Metamorphic Geology*, 1 – 35.
- Hogan J.P., Sinha A.K., 1991. The effect of accessory minerals on redistribution of lead isotopes during crustal anatexis: a model. *Geochim. Cosmochim. Acta*, **55**, 335-348.

- Holdaway, M.J., Guidotti, C.V., Novak, J.M., Henry, W.E., 1982. Polymetamorphism in medium- to high-grade pelitic metamorphic rocks, west-central Maine. *Geological Society of America Bulletin* **93**, 572-584.
- Holdaway, M.J., Mukhopadhyay, B., Dyar, M.D., Guidotti, C.V., Dutrow, B.L., 1997. Garnet-biotite geothermometry revised: new Margules parameters and a natural specimen data set from Maine. *American Mineralogist* **82**, 582-595.
- Hollister, L.S., Crawford, M.L., 1986. Melt-enhanced deformation: a major tectonic process. *Geology* **14**, 558-561.
- Hubbard, M.S., West, D.P. Jr., Ludman, A., Guidotti, C.V., Lux, D.R., 1995. The Norumbega fault zone, Maine: A mid- to shallow-level crustal section within a transcurrent shear zone. *Atlantic Geology* **31**, 109-116.
- Hutton, D.H.W., Reavy, R.J., 1992. Strike-slip tectonics and granite petrogenesis. *Tectonics* **11**, 960-967.
- Johannes, W., 1988. What controls partial melting in migmatites? *Journal of Metamorphic Geology* **6**, 451-465.
- Johnson, T.E., Brown, M., Solar, G.S., 2003. Low-pressure subsolidus and suprasolidus phase equilibria in the MnNCKFMASH system. Constraints on conditions of regional metamorphism in western Maine, northern Appalachians. *American Mineralogist*, **88**, 624-638.
- Kalsbeek, F., Jepsen, H.F. and Nutman, A.P., 2001, From source migmatites to plutons: tracking the origin of ca. 435 Ma S-type granites in the East Greenland Caledonian orogen. *Lithos*, **57**, 1-21.
- Kerr, S., Solar, G.S., 2001, Documentation of the transition between contrasting structural zones in western Maine, USA: testing a model. *Geological Society of America Abstracts with Programs*, **33**.
- Klauk, E.E., Solar, G.S., 2001, Quantifying the strain record in naturally deformed conglomerate, Silurian Rangeley Formation, western Maine. *Geological Society of America Abstracts with Programs*, **33**.
- Ludman, A., 1998. Evolution of a transcurrent fault system in shallow crustal metasedimentary rocks: the Norumbega fault zone, eastern Maine. *Journal of Structural Geology* **20**, 93-107.
- Marchildon, N. and Brown, M., 2003. Spatial distribution of melt-bearing structures in anatectic rocks from southern Brittany, France: implications for melt transfer at grain- to orogen-scale. *Tectonophysics*, **364**, 215-235.
- McCaffrey, R., 1992. Oblique plate convergence, slip vectors, and forearc deformation. *Journal of Geophysical Research* **97**, 8,905-8,915.
- Mengel, K., Richter, M. and Johannes, W., 2001, Leucosome-forming small-scale geochemical processes in the metapelitic migmatites of the Turku area, Finland. *Lithos*, **56**, 47-73.
- Miller, R.B., Paterson, S.R., 1999. In defense of magmatic diapirs. *Journal of Structural Geology* **21**, 1161-1173.
- Milord, I., Sawyer, E.W., Brown, M., 2001. Formation of diatextite migmatites and granite magma during anatexis of semi-pelitic metasediments: an example from St. Malo, France. *Journal of Petrology* **41**.
- Moench, R.H., 1970a. Evidence for premetamorphic faulting in the Rangeley quadrangle, western Maine. *Guidebook for Field Trips in The Rangeley Lakes - Dead River Region, Western Maine, New England Intercollegiate Geological Conference, 62nd Annual Meeting*, pp. D:1-12.
- Moench, R.H., 1970b. Premetamorphic down-to-basin faulting, folding, and tectonic dewatering, Rangeley area, western Maine. *Geological Society of America Bulletin* **81**, 1463-1496.
- Moench, R.H., 1971. Geologic map of the Rangeley and Phillips quadrangles, Franklin and Oxford Counties, Maine. U. S. Geological Survey Map **I-605**, scale 1:62,500.
- Moench, R.H., Boudette, E.L., 1970. Stratigraphy of the northwest limb of the Merrimack synclinorium in the Kennebago Lake, Rangeley, and Phillips quadrangles, western Maine. *Guidebook for Field Trips in the Rangeley Lakes - Dead River Region, Western Maine, New England Intercollegiate Geological Conference, 62nd Annual Meeting*, pp. A:1-25.
- Moench, R.H., Boone, G.M., Bothner, W.A., Boudette, E.L., Hatch, N.L., Jr., Hussey, A.M., II, Marvinney, R.G., Aleinikoff, J.N., 1995. Geologic map of the Sherbrooke-Lewiston area, Maine, New Hampshire, and Vermont, United States, and Quebec Canada. U.S. Geological Survey Map I-

1898-D, scale 1:250,000.

- Nabelek P.I., Bartlett C., and Glasscock M. (1999) Can trace element distribution in migmatites be used as analogues in understanding petrogenesis of anatectic granites. *Phys. Chem. Earth (A)* **24**, 295-298.
- Nabelek, P.I., Glascock, M.D., 1995. Rare earth element-depleted leucogranites Black Hills, South Dakota: A consequence of disequilibrium melting of monazite-bearing schists. *Journal of Petrology* **36**, 1055-1071
- Osberg, P.H., Moench, R.H., Warner, J., 1968. Stratigraphy of the Merrimack Synclinorium in west-central Maine. In: Zen, E-an, White, W.S., Hadley, J.B., Thompson, J.B. (Eds.), *Studies of Appalachian Geology: Northern and Maritime*, Interscience Publishers, New York, pp. 241-253.
- Panozzo, R., 1987. Two-dimensional strain determination by the inverse SURFOR wheel. *Journal of Structural Geology* **9**, 115-119.
- Paterson, S.R., Fowler, T.K., Jr. & Miller, R.B., 1996. Pluton emplacement in arcs: a crustal-scale exchange process. *Transactions of the Royal Society of Edinburgh* **87**, 115-123.
- Paterson, S.R., Miller, R.B., 1998. Magma emplacement during arc-perpendicular contraction. *Tectonics* **17**, 571-856.
- Pavlis, T.L., 1996. Fabric development in syn-tectonic intrusive sheets as a consequence of melt-dominated flow and thermal softening of the crust. *Tectonophysics* **253**, 1-31.
- Pressley, R.A., Brown, M., 1999. The Phillips Pluton, Maine, USA: Evidence of heterogeneous crustal sources, and implications for granite ascent and emplacement mechanisms in convergent orogens. *Lithos* **46**, 335-366.
- Ratcliffe, N.M., Hames, W.E., Stanley, R.S., 1998. Interpretation of ages of arc magmatism, metamorphism, and collisional tectonics in the Taconian orogen of western New England. *American Journal of Science* **298**, 791-797.
- Robinson, P., Tucker, R.D., Bradley, D., Berry, H.N, IV, Osberg, P.H., 1998. Paleozoic orogens in New England, USA. *Geologiska Föreningens i Stockholm Förhandlingar* **120**, 119-148.
- Rushmer, T., 1996. Melt segregation in the lower crust: how have experiments helped us? *Transactions of the Royal Society of Edinburgh: Earth Sciences* **87**, 73-83.
- Rutter, E.H., 1997. The influence of deformation on the extraction of crustal melts: a consideration of the role of melt-assisted granular flow. In: Holness, M. (ed) *Deformation-enhanced melt segregation and metamorphic fluid transport*, Mineralogical Society Series **8**, Chapman & Hall, London, 82-110.
- Rutter, E.H., Brodie, K.H., 1995. Mechanistic interactions between deformation and metamorphism. *Geological Journal* **30**, 227-240.
- Rutter, E., Neumann, D., 1995. Experimental deformation of partially molten Westerly granite under fluid-absent conditions, with implications for the extraction of granitic magmas. *Journal of Geophysical Research* **100**, 15, 697-715.
- Sawyer, E.W., 1994. Melt segregation in the continental crust. *Geology* **22**, 1019-1022.
- Sawyer, E.W., 1998. Formation and evolution of granite magmas during crustal reworking, the significance of diatexites. *Journal of Petrology* **39**, 1147-1167.
- Sawyer, E.W., 1999. Criteria for the recognition of partial melting. *Physics and Chemistry of the Earth (A)* **24**, 269-279.
- Schumacher, J.C., Hollicher, K.T., Robinson, P., Tracy, R.J., 1990. Progressive reactions and melting in the Acadian metamorphic high of central Massachusetts in southwestern New Hampshire, USA. In: Ashworth, J. R. & Brown, M. (eds) *High-temperature Metamorphism and Crustal Anatexis*, Unwin Hyman, New York.
- Sibson, R.H., 1985. A note on fault reactivation. *Journal of Structural Geology* **7**, 751-754.
- Smith, H.A., Barreiro, B., 1990. Monazite U-Pb dating of staurolite grade metamorphism in pelitic schists. *Contributions to Mineralogy and Petrology* **105**, 602-615.
- Solar, G.S.**, 1999. Structural and petrological investigations in the Central Maine belt, west-central Maine, with special reference to the migmatites. Ph.D. thesis, University of Maryland.
- Solar, G.S.**, Brown, M., 1999. The classic high-T -- low-P metamorphism of west-central Maine, USA: Is it post-tectonic or syn-tectonic? Evidence from porphyroblast-matrix relations. *Canadian Mineralogist*

- 37, 311-333.
- Solar, G.S.**, Brown, M., 2000. The classic high-T -- low-P metamorphism of west-central Maine, USA: Is it post-tectonic or syn-tectonic? Evidence from porphyroblast-matrix relations: Reply. *Canadian Mineralogist* **38**.
- Solar, G.S.**, Brown, M., 2001a. Deformation partitioning during transpression in response to Early Devonian oblique convergence, northern Appalachian orogen, USA. *Journal of Structural Geology* **22**, in press.
- Solar, G.S.**, Brown, M., 2001b. Petrogenesis of Migmatites in Maine, USA: Possible Source of Peraluminous Leucogranite in Plutons? *Journal of Petrology*, in press.
- Solar, G.S.**, Brown, M., **Tomascak, P.B.**, 2001, Deformation, metamorphism, and granite ascent in western Maine. in West, D.P., Jr. and Bailey, R.H. (eds.), *Guidebook for Geological field trips in New England, 2001 Annual meeting of the Geological Society of America, Boston, Massachusetts, Trip Q*, 30p.
- Solar, G.S.**, Pressley, R.A., Brown, M., Tucker, R.D., 1998. Granite ascent in convergent orogenic belts: testing a model. *Geology* **26**, 711-714.
- Solar, G.S.**, **Tomascak, P.B.**, 2001, Is there a relation between transpressive deformation and pluton emplacement in southern Maine? *Geological Society of America Abstracts with Programs*, **33**.
- Stewart, D.B., 1989. Crustal processes in Maine. *American Mineralogist* **74**, 698-714.
- Stromgard, K.E., 1973. Stress distribution during formation of boudinage and pressure shadows. *Tectonophysics* **16**, 215-248.
- Stüwe, K., Sandford, M., Powell, R., 1993. Episodic metamorphism and deformation in low-pressure, high-temperature terranes. *Geology* **21**, 829-832.
- Swanson, M.T., 1992. Late Acadian-Alleghenian transpressional deformation: evidence from asymmetric boudinage in the Casco Bay area, coastal Maine. *Journal of Structural Geology* **14**, 323-341.
- Tikoff, B., Fossen, H., 1993. Simultaneous pure and simple shear: the unifying deformation matrix. *Tectonophysics* **217**, 267-283.
- Tikoff, B., Fossen, H., 1999. Three-dimensional reference deformations and strain facies. *Journal of Structural Geology*, **21**, 1497-1512.
- Tomascak, P.B.**, Krogstad, E.J., Walker, R.J., 1996. U-Pb monazite geochronology of granitic rocks from Maine: implications for Late Paleozoic tectonics in the northern Appalachians. *Journal of Geology* **104**, 185-195.
- Tomascak, P.B.**, **Solar, G.S.**, 2001, Integrated structural/geochemical studies of granite magmatism, Maine Appalachians. *EOS Transactions, American Geophysical Union*, **82**.
- Tomascak, P.B.**, Brown, M., **Solar, G.S.**, Becker, H.J., Centorbi, T.L., Tian, J (in press), Source contributions to Devonian granite magmatism near the Laurentian border, New Hampshire and western Maine, USA. *Lithos*.
- van Staal, C.R., de Roo, J.A., 1995. Mid-Paleozoic tectonic evolution of the Appalachian Central Mobile Belt in northern New Brunswick, Canada: collision, extensional collapse and dextral transpression. In: Hibbard, J.P., van Staal, C.R., Cawood, P.A. (Eds.), *Current Perspectives in the Appalachian-Caledonian Orogen*, Geological Association of Canada Special Paper **41**, pp. 367-389.
- van, Staal, C.R., Dewey, J.F., MacNiocail, C., McKerrow, W.S., 1998. The Cambrian-Silurian tectonic evolution of the northern Appalachians and British Caledonides: History of a complex, west and southwest Pacific-type segment of Iapetus. *Geological Society Special Publication*.
- Weinberg, R.F., 1999. Mesoscale pervasive felsic magma migration: alternatives to dyking. *Lithos* **46**, 393-410.
- West, D.P., Jr., 1999. Timing of displacements along the Norumbega fault system, south-central and south-coastal Maine. In: Ludman, A., West, D.P., Jr. (Eds.), *Norumbega Fault System of the Northern Appalachians*, Geological Society of America Special Paper **331**.
- West, D.P., Jr., Hubbard, M.S., 1997. Progressive localization of deformation during exhumation of a major strike-slip shear zone: Norumbega fault zone, south-central Maine. *Tectonophysics* **273**, 185-202.

- West, D.P., Jr., Guidotti, C.V., Lux, D.R., 1995. Silurian orogenesis in the western Penobscot Bay region, Maine. *Canadian Journal of Earth Sciences* **32**, 1,845-1,858.
- Wickham, S.M., 1987. The segregation and emplacement of granite magmas. *Journal of the Geological Society, London* **144**, 281-297.
- Williams, H., 1978. Structural telescoping across the Appalachian orogen and the minimum width of the Iapetus Ocean. In: Strangway, D.W. (Ed.), *The Continental Crust and Its Mineral Deposits*, Geological Association of Canada Special Paper **20**, pp. 421-440.
- Zen, E-an, 1989. Tectonostratigraphic terranes in the Northern Appalachians: Their distribution, origin, and age; evidence for their existence. *Fieldtrip Guidebook T359*, 28th International Geological Congress, American Geophysical Union, Washington, D.C., 66pp.