## Volume 29 1993 Year-End Author Index

Abrajano, T., see O'Malley, V., 168.

Archer, A.W., see Wightman, W.G., 100.

**Arnott, A.** Petrology and tectonic setting of the late Devonian Fisset Brook Formation, Gillanders Mountain area, Cape Breton Island, Nova Scotia, 272.

**Bal, A.K.** Legume-*Rhizobium* symbiosis in the shorelines of Newfoundland: nitrogen fixation activity in beach pea root nodules, 156.

**Banfield, C.** An analysis of snow conditions and winter climate over the Grand lake catchment and other Newfoundland locations, 156.

**Barr, S.M.**, see McMullin, D.W.A., 43, 173; Macdonald, A.S., 137.

Barreiro, B., see Leo, G.W., 103.

Bath, A.J. and Langwieder, L. Multistakeholder attitudes toward and knowledge about water pollution in St. John's Harbour, Newfoundland, 156.

Beauchamp, S. and Tordon, R. East coast marine fog chemistry, 157.

Berger, A.R. The need for standard geological indicators of environmental change, 157.

Bergeron, M., see Lavoie, D., 51.

Boger, R. and Catto, N. Recent coastal evolution of gravel barachoix, Placentia Bay, Newfoundland, 157.

Bouchard, A., Hay, S.G., and Brouillet, L. Implications of environmental changes on rare plant distribution patterns in Newfoundland, 158.

Brouillet, L., see Bouchard, A., 158.

**Brown Macpherson, J.** Environmental change since deglaciation: the evidence of pollen and other data from lake and marine sediments, 158.

**Burden, E.** Pollen, paleotemperatures and the next ice age, 158. **Burden, E.**, see Christopher, T., 160.

**Burden, E.T. and Robbins, E.I.** A role for exploration geology in environmental monitoring in urban developments and wetlands in Newfoundland and Labrador, 159.

Butler, D.L. and Wolfe, A. Sedimentological, palynological and diatom evidence of the Younger Dryas, Pine Hill Pond, Terra Nova National Park, eastern Newfoundland, 159.

Calder, J.H., see Reed, B.C., 94, 179.

Catto, N. Sea level variation in Newfoundland and Labrador - glacio-isostatic, climatic and anthropogenic, 160.

Catto, N., see Boger, R., 157; MacKenzie, C., 167; Munro, M., 168.

Christopher, T., Davenport, P., and Burden, E. The effect of urban and industrial development on the geochemistry of the watersheds in the St. John's area: preliminary results, 160.

Clarke, D.B., see Tate, M.C., 98.

Clarke, J.E.H. The resolution and information content of EM100 and EM1000 multibeam imaging sonars, 76.

Coflin, K.C. and McAlpine, K.D. National seismic digital library: Husky digital data library, 76.

Coish, D.W., Wilton, D.H.C., Jackson, S.E., and Davenport,

**P.H.** Analysis of Mn and Fe coatings on stream pebbles by laser ablation microprobe-inductively coupled plasma-mass spectrometer (LAM-ICP-MS): a tool for environmental monitoring and geochemical exploration, 160.

Colbo, M.H. Aquatic insects as environmental indicators, 161. Costello, G., see Courtney, R.C., 77.

Costello, G., Loncarevic, B.D., and Meyer, L. New frontiers in ocean mapping, 76.

Courtney, R., see Fader, G.B.J., 79; Nichols, B., 93.

Courtney, R.C. and Costello, G. High resolution images of bathymetry offshore of Halifax, 77.

Courtney, R.C., Giles, P.S., Piper, D.J.W., and Loncarevic, B.D. Multiparameter study of the geology of the inner shelf south of Halifax, 78.

Courtney, R.C., see Giles, P.S., 81.

**Cumming, E. and Simpkin, P.** Private sector marine geoscience in Newfoundland and Labrador, 161.

Curry, K.L., see Eby, G.N., 121.

Davenport, P., see Christopher, T., 160.

Davenport, P.H., see Coish, D.W., 160.

**Davis, A.M.** The initiation and development of boreal peatlands in Atlantic Canada and their response to global warming, 161. **Dixon, H.L.**, see Pickerill, R.K., 61.

Donovan, S.K., see Pickerill, R.K., 61; Young, T.P., 149.

**Doran, L.** Are we managing the environment yet? The manager's dilemma and the first whiff of a solution, 162.

Dostal, J., see Keppie, J.D., 84.

**Doucet, K.M.** Flow patterns in the dendroid graptolite *Dictyonema*: implications for feeding currents and the origin of the planktonic mode of life, 272.

Doyle, E.N., see Pickerill, R.K., 61.

Dunning, G.R., see Miller, B.V., 91.

**Durling, P. and Marillier, F.** Distribution of Horton Group subbasins in the Gulf of St. Lawrence from seismic reflection data; implications for the early tectonic development of the Magdalen Basin, 78.

**Durling, P. and Marillier, F.** Structural elements and sedimentation patterns in the Magdalen Basin, 78.

Durling, P. and Marillier, F. Tectonic setting of Middle Devonian to Lower Carboniferous rocks in the Magdalen Basin, 199.

Eby, G.N. and Currie, K.L. Petrology and geochemistry of the Kingston complex - a bimodal sheeted dyke suite in southern New Brunswick, 121.

Eddy, B.G., see Forbes, D.L., 1.

Fader, G., see Nichols, B., 93.

Fader, G.B.J., see Stea, R.R., 98.

Fader, G.B.J., Parrott, R.D., Courtney, R., Nichols, B., Pecore, S.S., and Miller, R.O. A comparison of swath bathymetric data and sidescan sonograms from the inner Scotian Shelf off Halifax, 79.

Fensome, R.A., Henry, A.S., MacRae, R.A., and Williams, G.L. Dinoflagellates: a new look at old bugs, 79.

Forbes, D.L., Shaw, J., and Eddy, B.G. Late Quaternary sedimentation and the postglacial sea-level minimum in Port au Port Bay and vicinity, west Newfoundland, 1.

Fowler, M.G., see Mukhopadhyay, P.K., 92.

Friel, J.K., see Longerich, H.P., 166.

Fryer, B.J., see Longerich, H.P., 166.

**Fyfe, W.S.** Can we provide resources for ten billion humans?, 162.

Fyffe, L.R. and Pickerill, R.K. Geochemistry of Early Paleozoic black shales in the northeastern Appalachians, 80.

Gale, J.E. Defining the hydrogeological framework for environmental studies in Newfoundland and Labrador, 163.

Gibling, M.R. Late Carboniferous sea-level changes in the Sydney Coalfield: cyclothems, valley incision and regional correlation, 80.

Gibling, M.R., see Wightman, W.G., 100.

**Gibson, R.J. and Riley, S.C.** Long-term salmonid research near Cape Race, Newfoundland, 163.

Giggie, P., see Lentz, D., 87.

Giles, P.S., see Courtney, R.C., 78; Lynch, G., 88.

Giles, P.S., Courtney, R.C., Piper, D.J.W., and Loncarevic, B.D. Sea-floor bedrock geology, inner Scotian Shelf south of Halifax interpreted from EM100 swath bathymetry and magnetics, 81

Giles, P.S. and Lynch, G. Bedding-parallel faults, breccia zones, large-scale recumbent folds and basin evolution: the case for extensional tectonics in the onshore Magdalen Basin in Nova Scotia, 81.

Gillespie, R. Monitoring the environment using an airborne imaging spectrometer - applications and Newfoundland examples, 163.

Gillespie, R.T., see Titus, B.D., 170.

Goodfellow, W., see Lentz, D., 87, 88.

Gower, S.J., see Walker, J.A., 99.

Grantham, R.G., see Kozera, K.A., 85, 86.

Grantham, R.G. and Kozera, K.A. The East Milford Mastodon, its discovery and excavation, 81.

Groves, S.W. The international toxics monitoring project - a status report, 164.

Haedrich, R.L. Variability in Newfoundland's marine environment, 164.

Hay, S.G., see Bouchard, A., 158.

Haysom, S.J. Surficial geology of the area near the Titanic wreck, 272.

Helleur, R., see Titus, B.D., 170.

Hellou, J., see O'Malley, V., 168.

Henry, A.S., see Fensome, R.A., 79.

**Hill, B.** The Newfoundland environmental assessment process, 164.

Huang, Z., Shimeld, J., and Williamson, M. A fuzzy logic approach for detecting fractured zones with conventional well logs, 82.

Jackson, S.E., see Coish, D.W., 160; Longerich, H.P., 166.

**Jacobs, J.D.** An approach to monitoring and mapping mesoscale change in remote areas, 164.

Johnson, S.C., see McLeod, M.J., 90.

Johnson, S.C., McLeod, M.J., and Krogh, T.E. Geology and geochronology of the Fowle Lake area: evidence for Late Cambrian volcanism in southern New Brunswick, 83.

**Karsh, M.B.** Reconstruction of sapwood: a dynamic measure of foliage biomass, 165.

Keighley, D.G. and Pickerill, R.K. Nonmarine invertebrate ichnocoenoses from the Carboniferous of western Cape Breton Island, eastern Canada, 83.

Keppie, J.D., see Murphy, J.B., 92.

Keppie, J.D. and Dostal, J. Late Paleozoic tectonic models for the northern Appalachians: implications for the development of the Maritimes Basin, 84.

Kingston, J.C. Monitoring activities of the water resources management division, 165.

**Kingston, J.C.** Water quality monitoring in Newfoundland and Labrador, 165.

Kontak, D.J. Geological, geochemical, isotopic and fluid inclusion studies at the Gays River Zn-Pb deposit: carbonate-hosted base metal mineralization in the basal Windsor Group of Nova Scotia, 84.

Kontak, D.J. and Smith, P.K. An overview of Meguma gold deposits in the Meguma Terrane of southern Nova Scotia: geology, geochronology, isotopes, fluid inclusions and geofantasy, 85.

Kozera, K.A., see Grantham, R.G., 81.

Kozera, K.A. and Grantham, R.G. Field stabilization and field jacketing of *in situ* wet bones of the East Milford Mastodon, 85.

Kozera, K.A. and Grantham, R.G. Proposed wet bone conservation method for the East Milford Mastodon, 86.

Krogh, T.E., see Johnson, S.C., 83; Murphy, J.B., 92.

Kruge, M.A., see Mukhopadhyay, P.K., 92.

Kvale, E.P., see Wightman, W.G., 100.

Langdon, G.S. Examples of Carboniferous structural styles determined from seismic data in the Cabot Strait, 86.

Langdon, G.S. Upper Paleozoic strike-slip tectonics in the Cabot Strait: seismic studies at an old plate boundary, 87.

Langwieder, L., see Bath, A.J., 156.

Lavoie, D. and Bergeron, M. REE patterns as a tool for recognition of diagenetic beds: a case from the Lower Devonian Upper Gaspé Limestones, Gaspé Peninsula, Québec, 51.

Lentz, D., Giggie, P., Luff, B., and Goodfellow, W. Precious metal distribution in the Epigenetic Stringer Sulphide Zone at the Brunswick No. 12 deposit, Bathurst, New Brunswick, 87.

Lentz, D.R. and Goodfellow, W.D. Character, distribution, and origin of hydrothermal alteration associated with the Brunswick No. 12 deposit, Bathurst, New Brunswick, 88.

Leo, G.W., Mortensen, J.K., Barreiro, B., and Phillips, J.D. Petrology and U-Pb geochronology of buried Avalonian plutonic rocks on southeastern Cape Cod, 103.

Lines, A.W. Sedimentology and mineralogy of a reduction sphere occurrence in Hopewell Group strata at Dorchester Cape, New Brunswick, 273.

Liverman, D. Post-glacial sea level change in Newfoundland

as deduced from the distribution of radiocarbon dated marine shells, 166.

Lobel, P.B., see Longerich, H.P., 166.

Loncarevic, B.D. High-resolution magnetic mapping as a component of multi-parameter surveys, 88.

Loncarevic, B.D., see Costello, G., 76; Courtney, R.C., 78; Giles, P.S., 81; Piper, D.J.W., 219.

Long, D. Unveiling the secrets of the Queen Charlotte Basin, 273

Longerich, H.P., Jackson, S.E., Friel, J.K., Lobel, P.B., and Fryer, B.J. Elemental analysis of water, biological, and rock samples, 166.

Luff, B., see Lentz, D., 87.

Lynch, G., see Giles, P.S., 81.

Lynch, G. and Giles, P.S. The Ainslie detachment - field and geophysical evidence of Carboniferous low-angle extensional faulting in Nova Scotia, 88.

Macdonald, A.S. and Barr, S.M. Geological setting and depositional environment of the Stirling Group of southeastern Cape Breton Island, Nova Scotia, 137.

MacDonald, M.A. Petrographic and geochemical variations in aplite dykes from an outcrop in the Halifax Pluton, Nova Scotia, 89.

MacKenzie, C. and Catto, N. Sea level change during the Late Quaternary in the Botwood (NTS 2E/03) map area, 167.

MacRae, R.A., see Fensome, R.A., 79.

Marillier, F. Structure of the crust in the Canadian Appalachians; implications for the development of the Maritimes Basin, 89.

Marillier, F., see Durling, P., 78, 199.

Marjohan, E. The origin of laminated intervals in the Ben Nevis sandstones of the Grand Banks: a preliminary report, 273.

McAlpine, K.D., see Coflin, K.C., 76.

McCutcheon, S.R., see Walker, J.A., 99.

McKay, A. Measurement of compressional-wave velocity gradients in seabed materials - examples from the Beaufort Sea and the Sea of Japan, 90.

McKay, A. Tenth International Marine Geology Conference, Gelendzhik, Russia, and first impressions of research conditions in that country in October 1992, 90.

McLeod, M.J., see Johnson, S.C., 83; Ruitenberg, A.A., 95. McLeod, M.J., Johnson, S.C., and Ruitenberg, A.A. Southern New Brunswick compilation and correlation project by the New Brunswick Department of Natural Resources and Energy, 90.

McMullin, D.W.A., Barr, S.M., and Raeside, R.P. A re-interpretation of the "Bateman Brook Metamorphic Suite", Cape Breton Highlands, Nova Scotia, as sheared, fault-bounded blocks of other units, 43, 173.

Meades, B. Origin and successional status of heath in Newfoundland, 167.

Medioli, F.S., see Wightman, W.G., 100.

Meyer, L., see Costello, G., 76.

Miller, B.V. and Dunning, G.R. Grenvillian inlier in the Appalachian Orogen: U-Pb ages from the Blair River Complex, northern Cape Breton Island, Nova Scotia, 91.

Miller, H.G. Trends in mean monthly temperature for St. John's 1874-1991, 167.

Miller, R.O., see Fader, G.B.J., 79.

Mills, R.F. and Stea, R.R. Investigations of ancient and modern placer gold in the Meguma Terrane, onshore and offshore southern Nova Scotia, 91.

Montevecchi, W.A. Birds as bio-indicators in marine and terrestrial ecosystems, 168.

Mortensen, J.K., see Leo, G.W., 103.

Mukhopadhyay, P.K., Wade, J.A., Kruge, M.A., and Fowler, M.G. Characterization and maturation of selected Cretaceous and Jurassic source rocks and condensate/crude oil from Scotian Shelf Wells, 92.

Munro, M. and Catto, N. Sea level change in the Carmanville area in northeast Newfoundland, 168.

Murphy, J.B., see St. Jean, J.A.R., 27; Reed, B.C., 94, 179.

Murphy, J.B., Keppie, J.D., and Krogh, T.E. Sm-Nd and U-Pb isotopic compositions of felsic volcanic rocks in the Antigonish Highlands: tectonic implications, 92.

Nance, R.D., see St. Jean, J.A.R., 27; Reed, B.C., 94, 179.

Narbonne, G.M., see Sweet, N.L., 69.

Nichols, B., see Fader, G.B.J., 79.

Nichols, B., Courtney, R., Fader, G., and Parrott, R. Correlation of swath bathymetric images with metrics derived from seismic and sidescan data, 93.

O'Malley, V., Abrajano, T., and Hellou, J. Compound-specific carbon isotope analysis of PAH compounds isolated from shallow sediments from St. John's Harbour and Conception Bay (Newfoundland), 168

Palmer, S.E., see Waldron, J.W.F., 99.

Parrott, R., see Nichols, B., 93.

Parrott, R.D., see Fader, G.B.J., 79.

Parsons, M. Geochemistry and petrogenesis of late Cretaceous bentonites from the Kanguk Formation, Axel Heiberg and Ellesmere islands, Canadian High Arctic, 274.

Pecore, S.S., see Fader, G.B.J., 79.

**Pe-Piper, G.**, see Piper, D.J.W., 93, 219.

Phillips, J.D., see Leo, G.W., 103.

**Pickerill, R.K.**, see Fyffe, L.R., 80, Keighley, D.G., 83, Stanley, D.C.A., 97, 115.

Pickerill, R.K., Donovan, S.K., Doyle, E.N., and Dixon, H.L. Ichnology of the Palaeogene Richmond Formation of eastern Jamaica - the final chapter?, 61.

Pike, D.B., see Titus, B.D., 170.

Piper, D.J.W., see Courtney, R.C., 78; Giles, P.S., 81.

**Piper, D.J.W. and Pe-Piper, G.** Deformation and igneous intrusion in the Cobequid Highlands: relation to extension of the Magdalen Basin, 93.

Piper, D.J.W., Pe-Piper, G., and Loncarevic, B.D. Devonian - Carboniferous igneous intrusions and their deformation, Cobequid Highlands, Nova Scotia, 219.

**Raeside, R.P.** A mechanism for high-heat-flow metamorphism and widespread metasomatism in the Meguma Terrane, Nova Scotia, 94.

Raeside, R.P., see McMullin, D.W.A., 43, 173.

Ramezani, J., see Ritcey, D., 94.

Reed, B.C., Nance, R.D., Calder, J.H., and Murphy, J.B. The Athol Syncline: tectonic evolution of a Westphalian B-C depocenter in the Maritimes Basin, Nova Scotia, 94, 179.

Riley, S.C., see Gibson, R.J., 163.

Ritcey, D. and Ramezani, J. Nature and timing of mesothermal gold mineralization in western Newfoundland, 94.

Robbins, E.I., see Burden, E.T., 159.

Roberts, B.A. Ecology of landscapes with serpentinized rocks, 169.

Ruffman, A. October 3-4, 1884 telegraph cable breaks on the Tail of the Banks: the earliest recorded historical turbidity current?, 95.

Ruitenberg, A.A., see McLeod, M.J., 90.

Ruitenberg, A.A. and McLeod, M.J. Pre-, syn-, and post-accretion gold deposits in the New Brunswick Appalachians, 95. Rutherford, I.D. State of the environment reporting and anticipating environmental change, 169.

Rutter, N. Evidence and forcing mechanisms of past climatic changes, 169.

Ryan, P.M. Fifteen years of freshwater biological monitoring at the Experimental Ponds Area and other places in Newfoundland - experiences and suggestions, 170.

Ryan, R.J. and Zentilli, M. Allocyclic and thermochronological constraints on the evolution of the Maritimes Basin of eastern Canada, 96, 187.

St. Jean, J.A.R., Nance, R.D., and Murphy, J.B. Tectonic significance of late Paleozoic deformation in the Cape George Peninsula, Antigonish Highlands, Nova Scotia, 27.

St. Peter, C. Maritimes Basin evolution: key geologic and seismic evidence from the Moncton Subbasin of New Brunswick, 96, 233.

Scott, D.B., see Wightman, W.G., 100.

Scott, P.J. Monitoring the vegetation of Terra Nova National Park, 170.

Shaw, J., see Forbes, D.L., 1.

Shimeld, J., see Huang, Z., 82.

Simpkin, P., see Cumming, E., 161.

Smith, P.K. Bulk mineable gold potential in Nova Scotia: a new discovery, 97.

Smith, P.K., see Kontak, D.J., 85.

Stanley, D.C.A. and Pickerill, R.K. Ichnology of the Late Ordovician Georgian Bay Formation of southern Ontario, 97.

Stanely, D.C.A. and Pickerill, R.K. Shallow marine *Paleodictyon* from the Upper Ordovician Georgian Bay Formation of southern Ontario, 115.

Stea, R.R., see Mills, R.F., 91.

Stea, R.R. and Fader, G.B.J. Morphology and depositional

facies, inner Scotian Shelf near Halifax Harbour: implications for Late-Glacial sea-level, 98.

Stockmal, G.S., see Waldron, J.W.F., 99.

Sweet, N.L. and Narbonne, G.M. Occurrence of the Cambrian trace fossil *Oldhamia* in southern Québec, 69.

Tate, M.C. and Clarke, D.B. Petrogenesis of the Weekend dykes, a suite of Late Devonian spessartite lamprophyres in the Meguma Zone of Nova Scotia, 98.

Titus, B.D., Pike, D.B., Gillespie, R.T., Helleur, R., and Zang, H. Using remote sensing to monitor Kalmia angustifolia encroachment on disturbed forest sites in central Newfoundland, 170

Tordon, R., see Beauchamp, S., 157.

Wade, J.A., see Mukhopadhyay, P.K., 92.

Wadleigh, M.A. Tracing atmospheric sulphates using sulphur and oxygen isotopes, 171.

Waldron, J.W.F., Palmer, S.E., and Stockmal, G.S. Tectonically transported basement and platform units in the Stephenville area, western Newfoundland, 99.

Walker, J.A., McCutcheon, S.R., and Gower, S.J. Revised stratigraphy and paleogeography of Siluro-Devonian rocks adjacent to the Ordovician Elmtree Inlier, northern New Brunswick, 99.

Wightman, W.G., Scott, D.B., Medioli, F.S., Gibling, M.R., Archer, A.W., and Kvale, E.P. Late Carboniferous agglutinated foraminifera and thecamoebians from Nova Scotian coalbearing strata: paleogeographic, paleoenvironmental and paleoecological implications, 100.

Williams, G.L., see Fensome, R.A., 79.

Williamson, M., see Huang, Z., 82.

Williamson, M.A. Hydrocarbon charge models of east coast basins: a report on a joint industry, government and university project, 100.

Wilson, R.A. Stratigraphic relationships and mineralized horizons in the Heath Steele-Half Mile Lake area, Bathurst Camp, New Brunswick, 100.

Wilton, D.H.C., see Coish, D.W., 160.

Wolfe, A., see Butler, D.L., 159.

Young, T.P. and Donovan, S.K. The eocrinoid Ascocystites Barrande (Echinodermata, Blastozoa) from the Middle Ordovician of central Portugal, with comments on the stratigraphy of the Brejo Fundeiro Formation, 149.

**Zang, H.**, see Titus, B.D., 170.

Zentilli, M., see Ryan, R.J., 96, 187.