

the host rock. Compositional banding overprints cross-bedding and sedimentary laminations, and the concretions were deformed with their host rocks, indicating that they formed after deposition but before regional deformation, probably during diagenesis.

Samples for this study were collected throughout the Bluestone formation including Point Pleasant Park, Bluestone Quarry, and the Williams Lake area. The concretions and their host rocks lie within the contact aureole of the South Mountain Batholith, with metamorphic grade increasing from east to west toward the intrusive contact. Mineral assemblages vary from calcite + grossular + anorthite + augite in low-grade (distal) examples, to white mica + (Ca and Mn) garnet + biotite, to clinopyroxene + (Ca and Mn) garnet in high-grade (proximal) outcrops. The transition between concretion rims and host rocks is marked by radiating sprays of chlorite intergrown with minor biotite. The groundmass in this zone is dominated by detrital quartz with intergranular Ca-rich plagioclase. Detrital quartz and feldspar, ubiquitous in distal concretions and their host rocks, are virtually absent in concretions proximal to the contact. Systematic variations in mineralogy, texture, and composition will be used to constrain P-T- $X_{\text{fluid}}$  conditions in the contact aureole of the South Mountain Batholith.

---

**Contact metamorphism of calcareous concretions  
in the Bluestone formation, Halifax Group,  
Halifax, Nova Scotia**

---

GLENN G. CHAPMAN AND REBECCA A. JAMIESON  
*Department of Earth Sciences, Dalhousie University, Halifax,  
Nova Scotia B3H 4J1, Canada <gchapman@dal.ca>*

The Bluestone formation represents the uppermost unit of the Halifax Group in the Halifax area. It is an early Ordovician turbidite sequence, interpreted to have been deposited on the continental margin of Gondwana. The formation comprises a coarsening-up sequence of interbedded grey-blue slate, silt, and fine sandstone. A characteristic feature is the presence of abundant calcareous concretions concentrated within sandstone and siltstone layers. In outcrop the concretions generally form regularly spaced, discrete, oblate bodies from ~5 mm to 1 m across, and from 50 mm to several metres long. They locally form thin, continuous horizons, distinguishable by their distinctive green to buff colour and recessive weathering. Concentric colour banding in some concretions reflects systematic changes from Ca-rich cores to Ca-poor margins adjacent to