

PALEOGEOGRAPHY AND SEDIMENTATION IN THE LOWER
AND MIDDLE PALEOZOIC, EASTERN CANADA

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In the initial stages of the Paleozoic Era, a proto-Atlantic Ocean is assumed to have been present off the continental margins of eastern Canada. During the lower and middle Paleozoic (Cambrian to Devonian) there were at least nine known transgressions of epicontinental seas onto, and ultimately extending across, the eastern craton; four in the Cambro-Ordovician, one in the Silurian, and four in the Devonian. In the Cambrian and Early Ordovician, the continental margins may have been similar to the present Atlantic miogeocline with the dispersal of clastics essentially away from the craton and into a spreading ocean basin. In the early Middle Ordovician, and later, there is evidence that the proto-Atlantic was in the process of contraction which first brought about the development of island arc systems along the continental margins and ultimately the emergence of land masses in the Late Ordovician as the continents began the initial phases of collision. Thus, as the Taconian Highlands emerged along the southern margins of the North American continent, exogeosynclinal basins developed between the Taconides and the stable craton, these including the Allegheny, Quebec and Anticosti Basins. The dispersal of terrigenous clastics from that period onward was to the northwest to intertongue with carbonates (and evaporites locally) along the southern and eastern margins of the craton. At the same time, intracratonic basins, including Michigan, Moose River, Hudson Bay and Foxe Basins were developing to the northwest throughout the early and middle Paleozoic. On the basis of detailed and broad regional studies, carried out to date in the Hudson and St. Lawrence Platforms and intervening Paleozoic outliers, it is possible to reconstruct the probable paleogeographic limits of epicontinental seas and to reconstruct local and regional tectonic events that directly or indirectly affected the processes of sedimentation in the widely separated exogeosynclinal and intracratonic basins, and the intervening areas during the various stages of Paleozoic time.