

## Geology of the Carboniferous Hopewell and Cumberland groups, southeastern New Brunswick

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The northwestern depositional margin of the Cumberland Subbasin in New Brunswick exposes a Carboniferous sequence of poorly dated predominantly red bed continental clastics that have in whole, or in part, been previously assigned to the Hopewell Group. These red beds are conformably underlain by the mainly marine middle Viséan Windsor Group and overlain by the terrestrial late Namurian to Westphalian Cumberland Group.

Previously defined problems of Hopewell Group stratigraphy have in part been resolved. For example, along the basin margin, between the regional Harvey-Hopewell and Shepody faults, the Hopewell red beds are now interpreted to comprise two laterally separate facies of alluvial fan conglomerates. Clast content and transport vectors indicate that both conglomerate facies were derived from the adjacent Caledonia Uplift to the northwest. The present study has identified an unconformity near Alma between the locally derived Hopewell conglomerates and the distally derived red quartz-clast conglomerate, sandstone and mudrocks of the overlying Enragé Formation of the Cumberland Group. The unconformity suggests that a significant part of the Namurian section is missing here.

Southeast of the Shepody Fault, the Hopewell Group comprises a basin-axis succession comprising red fine grained sandstone and mudrocks of the Maringouin Formation and overlying grey and minor red quartzose sandstone, mudrocks and conglomerate of the Shepody Formation. The contact between the Maringouin and Shepody is conformable and gradational. Miospore assemblages across the boundary suggest a middle Viséan (AT Zone) age. The Shepody Formation is tentatively assigned a middle Viséan to early Namurian age. Miospore assemblages from the Shepody are somewhat confusing and are still being studied.

The contact between the Shepody Formation and the overlying Enragé Formation is not well exposed, but is here interpreted as a disconformity. This is based on the time gap between the early Namurian Shepody and the late Namurian Enragé strata. The relatively thin Enragé Formation underlies and is regionally conformable with the well-dated late Namurian to Westphalian A Boss Point Formation. Thus, the lithostratigraphic and palynologic data indicate a significant Namurian hiatus exists not only along the northwestern margin, but also in the axial part of the Cumberland Subbasin.